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...CONOMIC DEVELOPMENT AND CULTURAL CHANGE

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...SEARCH CENTER IN ECONOMIC DEVELOPMENT AND CULTURAL CHANGE
THE UNIVERSITY OF CHICAGO

ECONOMIC DEVELOPMENT AND CULTURAL CHANGE

A journal designed for exploratory discussion of the problems of economic development and cultural change. Preliminary versions of research findings and research hypotheses are welcomed in the interest of provoking constructive and fruitful discussion.

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ECONOMIC DEVELOPMENT AND CULTURAL CHANGE
Volume VII, No. 2 January 1959

EDITORIAL

During the three-day period, May 22-24, 1958, a Seminar on Indicators and Characteristics of Underdevelopment was held at the University of Chicago under the joint sponsorship of the Research Center in Economic Development and Cultural Change and the Department of Geography of that university. The Seminar was made possible by a grant from the Ford Foundation to further the identification of characteristics related to low-income countries, to facilitate their mapping on a world basis, and to explore the regional character of "underdevelopment". The specific purpose of the Seminar was to bring to bear on these issues the conceptual frames of reference of the several social science disciplines. Some twenty-five social scientists participated, chiefly from the University of Chicago, representing anthropology, economics, education, geography, history, planning, political science, and sociology. Law and business also were represented.

Six papers were presented. The first dealt with the general background of the problem; another described an on-going program of mapping factors commonly believed related to types of economic development. The other four dealt more specifically with ideas concerning the characteristics of the "underdeveloped" world as viewed by an anthropologist, an economist, a demographer, and a political scientist. These four papers are presented in revised form in this issue of ECONOMIC DEVELOPMENT AND CULTURAL CHANGE.

It is not surprising that each of these papers differs markedly from the rest; nor is it unexpected that the papers in demography and economics treat their problem with a degree of precision which differentiates them sharply from the other two. Work in these two disciplines on aspects of economic development has been rather more extensive and systematic than in anthropology and political science, and the variables of concern to the demographer and the economist tend to be more precisely definable than those concerning value systems and political organization. All four represent, however, significant steps toward a more systematic definition and understanding of the process of economic growth and the social and political changes concomitant with it.

Despite the diversity of themes treated in these papers, the Seminar represented a successful attempt to increase communication among social scientists regarding problems of economic growth and the lesser developed countries. Discussion was animated and profitable, and many suggestions emanating from the discussion have been incorporated into the revised versions of the papers. On the other hand, the need for increased communication among social scientists concerning these problems also was made clear. It is hoped that the maps in preparation showing the areal distribution and intensity of a variety of factors associated with development will provide useful empirical material for further interdisciplinary discussion and the raw material for formulating typologies of "underdeveloped" areas.

Norton Ginsburg
The University of Chicago

DEMOGRAPHIC INDICATORS OF ECONOMIC DEVELOPMENT*

Philip M. Hauser
The University of Chicago

The levels of economic activity and growth, despite complex conceptual and technical problems, are reasonably well measured in the economically more advanced nations of the world. In such countries statistics relating to economic activity are generally available, including data on national income, industrial production, agricultural production, employment, size and composition of the labor force, non-human energy utilized, transport and communication facilities, and the like. Where such direct measurements are available, population statistics need not be resorted to as "indicators of economic development". On the contrary, the economic data are often used as independent variables to help explain the significant demographic changes that have occurred as concomitants of economic development.

In the economically less developed nations of the world, in contrast, information about economic activity and growth is usually quite deficient or entirely absent. Moreover, population data are also scanty and inadequate, although they are more likely to be available than economic data. In fact, the absence both of adequate economic and demographic statistics may itself be regarded as one of the indicators of economic "underdevelopment".[1] In such areas the inadequacy or absence of direct measurements of economic performance and change impel the use of various indirect indices. Among these indices are the various population statistics which are becoming increasingly available. Researches of both economists and demographers have demonstrated a high degree of relationship between economic and demographic variables tending to justify the use of demographic data as indicators of economic level.[2]

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* Paper prepared for Seminar on Indicators and Characteristics of Underdevelopment conducted by Department of Geography, University of Chicago, May 22-24, 1958.

1. P. M. Hauser, "Population Statistics and Research in Planning Economic Development", in United Nations, World Population Conference, Vol. V, New York, 1955, pp. 927 ff.

2. For discussion and bibliography, see United Nations, Determinants and Consequences of Population Trends, New York, 1953, Part Two. See also Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations. I. Levels and Variability of Rates of Growth; II. Industrial Distribution of National Product and Labor Force; and III. Industrial Distribution of Income and Labor Force by States, United States, 1919-21 to 1955", in Economic Development and Cultural Change, Vol. V, No. 1 (October 1956); Supplement to Vol. V, No. 4 (July 1957); and Vol. VI, No. 4, Part II (July 1958).

This paper outlines some of the demographic measurements which may have utility as indicators of economic development and essays a brief discussion of their value and limitations.

General Considerations

Since the purpose of using the population statistics described below is to obtain some indication both of levels of economic activity and economic growth or change in levels, measurements of population change, as well as cross-section characteristics, must be considered. The date 1950 is suggested as the "current" date for cross-section analysis because under the statistical programs of the United Nations, the Specialized Agencies, and other bodies such as the International Statistical Institute and the Inter American Statistical Institute, a special effort was made to maximize the number of countries for which demographic and other statistics would be available on or near this date. Between 1945 and 1954, in consequence, about 80 percent of the world's population was enumerated in some kind of census. This undoubtedly is a higher proportion of the world's population than that ever before subjected to measurement. It may be anticipated that this proportion will be even further increased under the United Nations World Census Program for census undertakings to be conducted in and around 1960.[3]

While the cross-section data on or near 1950 will undoubtedly, for the time being, constitute the major body of demographic data available as indicators of economic development, efforts should be made to place these cross-section measurements in the context of population trends. For this purpose, even relatively rough analyses of patterns of change between 1900 and 1950 would be highly desirable. Data for such analyses have become increasingly available, largely as a result of the efforts of the United Nations.[4] Even rough analyses of direction of change, magnitude of change, and measurement of central tendency and dispersion in change would enhance the value of the demographic data as indicators of differences in level of economic activity and change therein between the more, and the less, economically advanced nations.[5]

In analyzing patterns of change in population size, composition, and distribution in the components of change itself, it will be important to attempt some control of factors distorting secular trend. That is, it would be desirable to take into account the impact of such factors as war and fluctuations in the business cycle on demographic trends. Here again only rough controls may be possible, because of the limitations of the data, but even rough controls to obtain "normal" or trend benchmark points would undoubtedly be useful.[6]

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3. United Nations, Principles and Recommendations for National Population Censuses, Statistical Papers, Series M. No. 27, New York, 1958.

4. See United Nations, Demographic Yearbook and Statistical Yearbook, New York, 1948 to 1957.

5. Kuznets, Vol. V, No. 1, op. cit.

6. Ibid., pp. 11 ff.

With this injunction in respect of the importance of obtaining dynamic as well as static population measurements, the discussion which follows will focus on the population statistics of greatest utility without repetitive references to the desirability of obtaining indices of change as well as cross-section measurements.

Proposed Demographic Indicators

The population statistics which are proposed as indicators of economic development are presented under the following headings: (1) population growth, (2) components of population change, (3) population composition, (4) population distribution, and (5) interrelated indices.

Population Growth

The rate of population growth is without question the most significant demographic measurement for consideration in relation to economic development. Even though rate of population growth is not unambiguously an indicator either of economic level or economic change (see Table 1), it is nevertheless a strategic statistic in relation to components of population change, namely, natality, mortality, and migration; and a basic datum to which to relate any direct measurements of economic activity which may be available. Unfortunately, estimates of population changes for post-censal periods are, in the absence of adequate vital registration systems and migration statistics, subject to great error. It is necessary, therefore, to use measurements of inter-censal change. Decadal or annualized percentages of change in total population for the nations of the world would constitute a starting point for the preparation of demographic indicators of economic development. Kuznets' utilization of rates of population growth in relation to economic development sets a pattern which may well be followed and elaborated upon. While his consideration of rates of population growth for the first half of the century embraces over 50 countries, the number of areas could be increased somewhat if change for the last inter-censal decade only were utilized.[7] Further reference to the use of population change as an indicator of economic development will be made in the consideration of components of population change and the demographic typology below.

Components of Population Change

Mortality. Mortality data, in various forms, afford not only a measurement of one of the components of total population change, but also constitute, in themselves, one of the best indicators of level of economic development and growth. The crude (or general) death rate, despite the fact that it is in part a function of the age structure of population and therefore raises questions of comparability, has been historically sensitive to economic development. In the experience of the more developed nations, decreases in the crude death rate

7. Kuznets, Vol. V, No. 1, op. cit., pp. 10 ff.

were highly correlated with increased levels of economic activity. In fact, it was the relatively great decline in mortality reflected in the decrease in the crude death rate which was largely responsible for the "demographic revolution"--the great increase in the rate of population growth experienced by the nations first to achieve relatively high economic development.[8] The utility of the crude death rate as a correlate of economic advance is enhanced by using it in relation to general fertility rates as a basis for the demographic typology discussed below. (See Table 1.)

Mortality data, quite apart from their role as a component of population change, may also be interpreted sui generis as a measurement of the extent to which a nation provides a milieu in which life itself can be sustained. In this sense, differences in death rates represent measurements of differences among nations not only in level of economic development, but also in social and political organization as they may affect life itself. But despite this admixture of forces, it is clear that level of economic development has played a major role in the past in accounting for differential mortality conditions.

For the analysis of differences in mortality conditions, a number of measurements superior to the crude death rate are available.[9] These include the infant mortality rate, the "late infant mortality rate", various mortality ratios, life expectancy, cause of death analyses, and various composite indices derived largely from a life table. In general, in these types of measurements, national differences may be interpreted as reflecting differences in conditions conducive to mortality, relatively free of the distorting influences of differences in age structure.

The infant mortality rate is a relatively sensitive indicator of differences in level of economic development. Historically, among the economically advanced nations, the earliest and greatest gains in improved mortality conditions were manifest in the relatively great reductions in deaths to persons under one year of age; and a similar pattern is discernible in the improving mortality conditions in the less developed areas of the world today. Even more sensitive than the infant mortality rate, however, is the "late infant mortality rate"--that is, infant mortality (deaths during the first year of life) minus neo-natal mortality (deaths during the first month of life). Late infant mortality is the more sensitive indicator because deaths occurring during the first months of life are more attributable to biological and congenital forces than to economic and social factors. Deaths to infants during the last 11 months of their first year of life reflect more than deaths during the first month of life, the impact of economic and social conditions.

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8. United Nations, Determinants and Consequences of Population Trends, New York, 1953, Ch. 14; George Stolnitz, "A Century of International Mortality Trends", Population Studies (July 1955).

9. L. I. Dublin, Alfred J. Lotka, and Mortimer Spiegelman, Length of Life, New York, 1949, Ch. 1 and 15; D. J. Bogue and E. M. Kitagawa, Techniques of Demographic Research, Population Research and Training Center, University of Chicago (preliminary draft, hectographed).

Table 1. Indices of Economic Development and Specified Demo

	United States	Belgium	United Kingdom	Netherlands	Argentina
1. National income per capita: 1952-54 average (U.S. dollars)	1,870	800	780	500	460
2. Percent of gross national product from agriculture circa 1956	5	8	4	11	18
3. Percent of labor force in agriculture	12.2	12.1	4.9	19.5	25.2
4. Steel consumption per capita	1,323	653	838	522	161
5. Rate of population increase, 1953-56	1.8	0.6	0.4	1.2	1.9
6. Crude birth rate	24.9	16.8	16.1	21.2	23.8
7. Crude death rate	9.4	12.1	11.7	7.8	8.2
8. Infant mortality rate	26.0	45.7	24.5	19.0	58.5
9. Expectation of life at birth, male	67.3[5]	62.0	67.5	71.0	56.9
10. Percent of population 65 years and older, circa 1950	8.2	11.1	10.8	7.9	3.9
11. Dependency ratio	62.9	49.2	51.6	62.1	55.7[4]
12. Percent urban 20,000 and over	46.4[4]	32.0	70.8	49.7	48.3
13. Demographic type	5	5	5	5	4
14. Index of child wastage	4.1	7.6	3.3	3.1	12.0
15. Index of human wastage in reproduction	7.6	9.1	5.0	4.4	13.0
16. Index of human wastage in production	35.4	35.8	29.6	21.6	42.8
17. Index of relative development[3]	+320.2	+79.8	+75.3	+12.4	+3.4

1. Data are for former "Banovina of Drava" (part of present Slovenia) and are for 1931-33.
2. Data are for 1936-38.
3. Index based on 55 country total.
4. Linear interpolation of age or size group.
5. Data are for white population only. For nonwhite males 1955, 61.2 years.

Source: Items 1 and 17. United Nations, Per Capita National Product of 55 Countries: 1952-1954, Statistical Papers, Series E, No. 4, Table 2.
Item 2. Statistical Abstract of the United States, 1958, Table 1186.

graphic Indices for Selected Countries, circa 1950 to 1956

Mexico	Portugal	Japan	Philippines	Paraguay	Egypt	India	Yugoslavia
220	200	190	150	140	120	60	-
-	28	20	40	51	35	44	30
57.8	47.7	48.3	65.7	53.8	53.6	70.6	66.8
95	77	245	32	-	22	21	101
2.9	0.8	1.3	1.9	2.9	2.1	1.3	1.6
46.4	22.9	18.5	24.4	49.0	40.0	27.0	25.8
13.7	12.1	8.0	9.2	10.6	18.4	11.7	11.2
83.3	87.8	40.7	110.9	81.4	148.5	99.9	98.0
37.9	58.8	63.9	48.8	-	35.7[2]	32.5	50.1
3.4	7.0	4.9	3.2	3.7	3.1	3.6	5.7
82.3	56.1	64.1	89.8	90.4	70.0	69.6	61.0
-	16.5	42.4	55.6	15.2	29.1	12.0	12.3
3	4	4	2	3	2	2	4
33.4	13.4	6.4	-	-	39.1[2]	40.0	20.0[1]
31.4	7.4	9.6	-	-	21.6[2]	47.1	17.5[1]
61.2	33.4	33.4	-	-	55.0[2]	74.2	43.7[1]
-50.6	-55.1	-57.3	-66.3	-68.5	-73.0	-86.5	-

Item 3. United Nations, Demographic Yearbook, 1956, Table 12.
Item 4. Statistical Abstract of the United States, 1958, Table 1189.
Item 5. United Nations, Statistical Yearbook, 1957, Table 1.
Items 6, 7, 8, and 9. Statistical Abstract of the United States, 1958, Table 1184.
Item 10. Table 3.
Item 11. United Nations, Demographic Yearbook, 1956, Table 4; Demographic Yearbook, 1955, Table 10, Part A.
Item 12. United Nations, Demographic Yearbook, 1955, Table 8.
Items 14, 15, and 16. Computed from data in United Nations, Demographic Yearbook, 1957, Table 26.

Various forms of death ratios tend also to be highly correlated with level of economic development. Among the more important of these are: infant mortality as a percent of total mortality; deaths of children under five as a percent of total deaths; deaths of persons 50 years of age and over as a percent of the total deaths. The first two of these ratios are inversely related with economic level; the latter, directly related.

A particularly elegant measurement of differences in mortality conditions is afforded by the life table function, "expectation of life". The expectation of life of the population at birth summarizes the effects of death rates at all ages and provides a single numerical expression of mortality conditions in a nation. This index may be computed for ages other than the beginning of life for varying analytical purposes.

Also sensitive to differences in economic level is the analysis of mortality by cause. In general, in the less developed nations of the world, deaths from the parasitic and infectious diseases constitute a relatively high proportion of all mortality; in the more developed nations of the world, a high proportion of all deaths is attributable to degenerative causes--coronary and circulatory diseases, cancer, and the like. These differences in cause of death indicate the differential ability of nations to keep their populations alive for major portions of the span of life. The cause of death measurements may be expressed either as cause-specific rates or as mortality ratios.

Finally, even though data for the purpose are relatively limited, reference should be made to the prospect of utilizing various composite indices which are undoubtedly highly correlated with differences in economic development and are subject to interpretations with special import for economic development. Three such indices, which may be readily calculated for nations for which life tables are available, are proposed: the "index of human wastage in reproduction";[10] the "index of child wastage"; and the "index of human wastage in production". The first of these indices is a measurement of the proportion of females who fail to survive during their child-bearing period ($100 - M_{sf}$, where M_{sf} is the percentage of female survivors between ages of 15 and 45). The second index is a measurement of the proportion of a population which fails to survive to productive age ($100 - S_{15}$, where S_{15} is the percentage of survivors of both sexes to age 15). The third index, of special economic import, is a measurement of the proportion of males who fail to survive during their productive age ($100 - M_{sm}$, where M_{sm} is the percentage of male survivors between the ages of 15 and 65).

The index of human wastage in reproduction is a measurement of differentials in the ability of nations to enable women to survive for the reproduction of the subsequent generation. The index of child wastage is the measurement of differentials among nations in their ability to rear their populations to productive age. The index of human wastage in production may be interpreted as an indication of the differential ability of nations to achieve a productive return on investment in the rearing of their populations.

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10. Philip M. Hauser, "Differential Fertility, Mortality and Net Reproduction", unpublished Ph. D. dissertation, Department of Sociology, University of Chicago, 1938, pp. 58 ff.

More elaborate measurements of the same type are possible in estimating the number of man-years of labor force activity which are lost as the result of mortality or other causes preventing the population from labor force participation. But such indices require reasonably good age specific labor force participation rates as well as life tables, and such data are not widely available for the less developed nations of the world. Composite indices derivable from life tables alone may provide more comprehensive world coverage, especially because life tables may be calculated with reasonably good results from census returns of population classified by age. In general, the simpler the rate to which reference has been made above, the more generally available it is likely to be. A Committee of Experts, convened by the Secretary General of the United Nations jointly with the International Labour Office and the United Nations Educational, Scientific and Cultural Organization, has particularly recommended the use of expectation of life at birth, the infant mortality rate, and the crude annual death rate as indicators of a proposed "health component" of the level of living.[11] More recently an Expert Committee on Health Statistics of the World Health Organization proposed the utilization of "the percentage of deaths at ages 50 and over to total deaths" as a "comprehensive health indicator".[12] Each of the indices discussed is worth consideration in efforts to relate demographic phenomena to economic development.

Although decline in mortality has been highly associated with economic development in the experience of the more advanced nations, recent developments indicate that this relationship may, for the time being at least, be breaking down. Among the more advanced nations, reductions in the death rate were achieved over relatively long periods of time during which product per head and levels of living rose. For example, in rough summary, it may be stated that general improvement in food supply reduced the death rate by about ten points from a level of about 40 (deaths per 1,000 total population per year); that an additional ten points of improvement were gained through environmental sanitation and other public health measures; and that a further reduction of ten points was achieved by improvements in medical practice to bring about a crude death rate of about 10. These successive developments in the experience of the more advanced nations were spread out over several centuries.

In contrast,under various economic development programs in the less advanced areas of the world conducted with the technical assistance of the more advanced nations through the United Nations, the Specialized Agencies, and various unilateral programs, great reductions in mortality are being effected in relatively short periods of time during which relatively little, if any, increase in product per head or level of living is being achieved. A dramatic instance of this development is afforded by the experience of a relatively small underdeveloped area, Ceylon, in which, as a result of a combination of anti-malarial activities and the widespread administration of antibiotics and other modern medical practices, the death rate was halved in considerably less than 10 years. To the extent that great improvements may be achieved in health and longevity as a result

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11. United Nations, Report on International Definition and Measurement of Standards and Levels of Living, New York, 1954, pp. 28 ff.

12. World Health Organization, Expert Committee on Health Statistics, Fifth Report, WHO Technical Report Series No. 133, Geneva, 1957, pp. 20-21.

of modern medicine, without the benefit of increased product per head or levels of living, the usefulness of measurements of mortality as indicators of economic development will be impaired (see Table 1).

Such impairment, however, is more likely to affect post-World War II and future developments, than the relationships between mortality and economic development prior to World War II. It may turn out, of course, that in the long run the relationship between death rates and economic development may again emerge. For it is unlikely that such improvement in level of mortality can be maintained for any length of time in the absence of economic growth.

Fertility. Fertility, like mortality, may be utilized as an indicator of economic development, both as a component of population growth, and, sui generis, as a reflection of national differences in economic, social, and political organization. The experience of the more economically advanced nations of the world reveals a high inverse correlation between birth rates and level of economic development in both senses. That is, the economically advanced nations have, with some lag, manifested declines in fertility as well as declines in mortality.

The general or crude birth rate, like the crude death rate, reflects not only fertility conditions but also differences in the age and sex structure of the population. In addition to crude rates, therefore, it is desirable, in order to improve comparability, to use birth rates which control population composition, such as fertility rates (rates related to females of reproductive age) and age standardized rates. One simple form of the standardized fertility rate is the measurement of "total fertility" (the summation of age specific fertility rates); or the gross reproduction rate (like the total fertility rate, except that it is restricted to female births). Net reproduction rates (like gross reproduction rates, but with allowance for mortality of women) which indicate the replacement implications of current fertility and mortality may also be useful as indicators but are likely not to be unambiguous indicators of economic development.

Again the simpler rates are likely to be more widely available and provide the more comprehensive world coverage. Of considerable usefulness in this regard may be the "effective fertility ratio", an indirect measurement of the birth rate which, in the absence of vital registration statistics, may be calculated from an age distribution afforded by a population census (number of children under 5 per 1,000 women of reproductive age). Since the fertility ratio is affected by child mortality, national cross comparisons are possible only among nations of approximately the same mortality levels. Differences between the more developed and the less developed nations, however, are large enough so as to make the fertility ratio a useful indicator. In fact, because of the higher mortality levels in the less developed nations, the differences tend to be understated.

Birth rates as indicators of economic development may, like death rates, be more useful for pre-World War II than post-World War II conditions. Postwar booms in marriages and births, particularly in many of the economically advanced nations, tend to impair the utility of birth rates as an indicator of economic level (see Table 1).

In view of these limitation, it may be that the most effective use of birth rates as indicators of economic development lie in their relationships to death rates. Variations in interrelations of birth and death rates make possible the construction of a demographic typology which merits consideration as an indicator of economic development.

Demographic Type. Efforts on the part of demographers to explain the "demographic revolution" have produced the "theory of the demographic transition".[13] In brief, this theory is a generalization holding that the industrial revolution and related changes effected modification of fertility-mortality relationships so as to produce "stages" of demographic change. Patterns of mortality-fertility relationships have been variously described in the literature. Particularly useful for the purpose at hand is the scheme adopted by the United Nations as a basis for its world, regional, and national population projections in 1954.[14] The United Nations typology differentiates five patterns of birth-death rate relationships in addition to an "undefined" one. This typology, with the allocation of the areas of the world, the population, and the percentage of the world's population which fall into each category, is reproduced in Table 2.

An examination of the areas of the world by demographic type indicates the general association between fertility-mortality patterns and levels of economic development. A cross-section analysis of this kind is undoubtedly useful, but it must be emphasized that the assumption that the less developed areas will necessarily undergo the same stages of demographic transition that the more developed nations experienced is a tenuous one.[15] In consequence, it may be that the demographic type may in the future cease to be as useful an indicator of economic development as it appears to be at the present time.

Population Composition

Changes in fertility and mortality produce changes in the age structure of a population. Thus, even where adequate vital registration systems do not exist to provide measurements of birth and death rates, a census tabulation of population by age shows the effects of previous natality and mortality behavior. Differences in the age composition of populations, in consequence, are also indicators of differences in level of economic development.

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13. United Nations, Determinants and Consequences of Population Trends, pp. 44 ff.

14. United Nations Population Division, "Framework for Future Population Estimates 1950-1980, by World Regions", World Population Conference, New York, 1955, Vol. III, pp. 285 ff.

15. United Nations, Determinants and Consequences of Population Trends, Ch. XV; S. Kuznets, Towards a Theory of Economic Growth, Columbia University, 1955, mimeographed.

Table 2. World Regions Classified by United Nations Demographic Typology, by Population and Percent of World Population in Each Class, circa 1950

Birth rate	Death rate	Area	Population (in millions)	Percent of world population
1. High	High	Middle Africa	141	6
2. High	Declining but still high	North Africa Asia (except Japan)	1,280	52
3. High	Declining but fairly low	Southern Africa Middle America Tropical South America	149	6
4. Declining	Fairly low	Temperate South America Japan USSR Balkan Peninsula	359	15
5. Low or fluctuating	Low	North America Most of Europe Australia and New Zealand	523	21
6. Undefined		Pacific Islands	2.8	-

Source: United Nations, World Population Conference, 1954, New York, 1955, Vol. III, pp. 288 ff.

The simplest of the measurements of differences in age structure is afforded by the proportion of the population that is under 15 years of age, or 65 years of age and over. The former is inversely, and the latter directly, related to level of economic development. Table 3, listing 72 countries arrayed in order of percentage of population 65 years of age and over, suggests the utility of age structure as an indicator of level of economic development.

The United Nations has classified the nations of the world into three categories, the "aged", the "mature", and the "young".[16] The "aged" nations, those with over 7 percent of their populations 65 years of age and over, are on the whole the more economically developed nations of the world. The aged countries are entirely in Europe or areas mainly settled by Europeans, in North America and Oceania. The "mature" countries, that is, countries with 4 to 7 percent of their population 65 years of age and over, are primarily countries undergoing industrial transition or nations with income per head intermediate between the aged and young nations. The "young" nations, those with less than 4 percent of their population 65 years of age and over, are

16. United Nations, The Aging of Populations and Its Economic and Social Implications, New York 1956, pp. 7 ff.

Table 3. Population 65 and Over for 72 Countries circa 1950

Country	Percent of population 65 and over	Country	Percent of population 65 and over
France	11.79	British Guiana	3.99
Belgium	11.05	Honduras	3.97
Great Britain	10.83	Jamaica	3.92
Ireland	10.69	Argentina	3.92
Sweden	10.32	Puerto Rico	3.80
Austria	10.13	Paraguay	3.72
West Germany	9.98	South Korea	3.70
Norway	9.64	Alaska	3.69
New Zealand (except Maoris)	9.58	Union of South Africa (non-European)	3.64
Switzerland	9.57	India	3.58
East Germany	9.28	Ecuador	3.54
Denmark	9.11	Chile	3.50
United States	8.18	Ceylon	3.48
Italy	8.06	Turkey	3.41
Australia	8.02	Mexico	3.36
Netherlands	7.86	Cuba	3.34
Canada	7.75	Panama	3.33
Czechoslovakia	7.58	Malaya	3.21
Iceland	7.52	Philippines	3.15
Spain	7.23	Egypt	3.10
		El Salvador	2.96
Portugal	6.98	Angola	2.93
Hungary	6.97	Columbia	2.90
Soviet Union	6.90	Costa Rica	2.89
Finland	6.62	Dominican Republic	2.86
Greece	6.31	Nicaragua	2.85
Basutoland	6.24	Burma	2.83
Union of South Africa (European)	6.18	Algeria (Moslems)	2.70
Yugoslavia	5.67	Venezuela	2.66
Poland	5.08	Guatemala	2.61
Japan	4.94	Thailand	2.58
Peru	4.32	New Zealand (Maoris)	2.54
Trinidad and Tobago	4.11	Formosa	2.50
Haiti	4.00	Brazil	2.45
Israel	4.00	Mozambique	2.24
		Greenland	2.17
		Gold Coast	1.52
		Togoland	1.46

Source: Compiled from United Nations, The Aging of Populations and Its Economic and Social Implications, New York, 1956; and United Nations, Demographic Yearbooks since 1950.

without exception the economically less developed countries of the world. They are located largely in Asia, South America, and Africa.

Another index based on age structure of the population with direct economic significance is afforded by the "dependency ratio" and its components. The dependency ratio is a measurement, based on age structure alone, of the number of persons of "dependent" age per 100 persons of "productive" age. Conventionally, population of dependent age is regarded as that under 15 or 65 and over; population of productive age is that 15 to 64 years old. This index may be broken into two components, namely, one which gives younger dependents, and the second, older dependents per 100 persons of productive age. The dependency ratio has direct economic significance in that, all other things being equal, decreases in the dependency ratio tend to result in increases in product per head.

Other statistics relating to population composition may also be useful as indicators of economic development. Without question, the most significant would be the proportion of the working population engaged in agriculture and other labor force statistics. The labor force data, however, are not elaborated upon here. Also useful would be such statistics as those relating to literacy or years of schooling. Detailed statistics on population composition, however, are not likely to be available in adequate form for many of the less developed nations of the world.

Population Distribution

Economic development based on industrialization has, in the experience of the more advanced nations, been accompanied by increased urbanization--that is, by increasing proportions of population resident in cities. The urbanization of a population is, therefore, positively correlated with level of economic development.

National practices differ considerably in the definition of "urban" population.[17] To obtain comparable indices of urbanization, therefore, it is desirable to follow the proposal of the United Nations that size of population agglomeration be used for purposes of international comparability. It is suggested that the proportion of population resident in places of 20,000 population and over be taken as a suitable indicator of economic development. The choice of this size classification would tend to avoid problems arising from differences in practices in incorporation and in designation of smaller agglomerations as "cities"; and tend also to minimize the inclusion of populations as "urban" which are essentially agricultural and rural in character.

Refinements of an index of urbanization are possible, of course, by introducing various city-size categories. Among the significant breaking points would be cities of 100,000 and over and cities of 1,000,000 and over. Improved

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17. United Nations, Demographic Yearbook, 1955, New York, 1955, p. 16.

collection of data promises to make urbanization data more useful in the coming years as indicators of economic development.[18]

Interrelated Indices

Population statistics, in the absence of direct measurements of economic activity and growth, may serve, as suggested above, as indicators of economic development. Used in conjunction with direct measurements of economic activity, however, population data may increase their significance and provide better indices of changes. The use of population statistics in relation to economic data in the calculation of per capita indices, and various ways of relating changes in economic activity to changes in population, are considered in the section which follows.

Despite patent limitations for purposes of international comparability of an index expressed in monetary terms, perhaps the best single measurement of economic level and economic growth is the measurement of per capita national income. Per capita national income would presumably be a direct measurement of level of economic development and, for different periods of time, of changes in level. This index may be further refined by obtaining various per capita expressions of components of national income, as for example, savings, consumer expenditures, disposable income, investment (of various categories), output of food (in calories), industrial production, utilization of non-human energy, output and consumption of steel, and the like.

Measurements would be desirable also relating rate of economic growth to rate of population growth. Indices of this type can be calculated by relating the rate of increase in national income to the rate of population increase expressed either as a ratio or as a difference. This index may be difficult to use on a current basis because of relatively large errors in statistics on year to year changes both in national income and in population.

Also worthy of consideration as a measurement of the relative position of a nation in the scale of economic development is an index relating the nation's proportion of total world product (as measured by national income, industrial output, agricultural output, etc.) to its proportion of total world population.[19]

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18. Kingsley Davis and Hilda Hertz, The Pattern of World Urbanization, forthcoming; Philip M. Hauser, "World and Asian Urbanization in Relation to Economic Development and Social Changes", in Philip M. Hauser, ed., Urbanization in Asia and the Far East, Calcutta, 1957, pp. 53-95.

19. For examples of other uses of this index see: Philip M. Hauser, "Workers on the Unemployment Relief Rolls in the United States, March, 1935", Monthly Report of the Federal Emergency Relief Administration, Washington, April 1936, pp. 1-29; Simon Kuznets, ibid., p. 17; see also the use of P. Sargant Florence, W. G. Fritz, and R. C. Gilles, "Measures of Industrial Distribution", National Resources Planning Board, Industrial Location and National Resources, Washington, 1943, Chapter 5.

The "index of relative development" obtained in this manner would be an expression of the extent, in percentage terms, to which a nation has more than its share, or less than its share, of world income, in relation to its share of world population.

The index is given by the following expression:

$$(1) \qquad R = \left(\frac{\frac{Y_i}{\sum_{i=1}^{n} (Y)}}{\frac{P_i}{\sum_{i=1}^{n} (P)}} \right) 100 - 100, \text{ where}$$

R = index of relative development

Y_i = income of i^{th} nation

$\sum_{i=1}^{n} (Y)$ = income of all nations of world, or of all for which there are data

P_i = population of i^{th} nation

$\sum_{i=1}^{n} (P)$ = population of all nations of world, or of all for which there are data

The calculation of the index can, of course, be simplified by multiplying the per capita income of each nation by a constant, the reciprocal of the per capita income of the world. That is, R is also given by:

$$(2) \qquad R = \frac{Y_i}{P_i} \left(\frac{\sum_{i=1}^{n} (P)}{\sum_{i=1}^{n} (Y)} \right) 100 - 100$$

The index is, in fact, also interpretable as the extent to which, in percentage terms, the per capita income of a nation is above or below world per capita income.

Parallel to this index would be the analogous dynamic one relating change in national income to change in population. Thus, a nation's proportion of the world's total change in income for a specified period could be related to its proportion of total change in world population.

The index is given by the expression:

$$(3) \qquad R_c = \left(\frac{\dfrac{\Delta Y_i}{\Delta \sum_{i=1}^{n} (Y)}}{\dfrac{\Delta P_i}{\Delta \sum_{i=1}^{n} (P)}} \right) 100 - 100, \text{ where}$$

R_c = index of change in relative development

ΔY_i = increase in income of i^{th} nation over specified period

$\Delta \sum_{i=1}^{n} (Y)$ = increase in income of all nations in world, or all available nations, over specified period

ΔP_i = increase in population of i^{th} nation over specified period

$\Delta \sum_{i=1}^{n} (P)$ = increase in population of all nations in world, or all available nations, over specified period

The same short cut in calculation is possible, as was indicated above for the "index of relative development" (equation 2), and the same alternative interpretation is also possible, namely as an index of the extent to which national change in per capita income was above or below world change.

These indices can, of course, be employed for any item in relation to any base, provided that the items in both the numerator and denominator are aggregative for the world, or for a large enough part of the world to make the index meaningful.

Concluding Observations

With increasing interest in the relative economic position of the nations of the world, it may be anticipated that continuing efforts will be made to measure differences and changes in differences in national economic activity and levels of living.[20] Without doubt both economic and demographic data will improve in the less economically developed, as well as in the more economically advanced, nations of the world. For some time to come, however, basic economic and demographic data will be subject to much error and will continue to be unavailable for many of the less developed areas. It is likely, however, that demographic data may become available for many of the less advanced nations before direct measurements of economic activity are obtained. In consequence, demographic data will undoubtedly be used as indices of economic level, in the same manner as proposed in the research program, "Regionalization of

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20. E. g., United Nations, Report on the World Social Situation, New York, 1957; United Nations, Report on International Definition and Measurement of Standards and Levels of Living.

Table 4. Rank Order of Nations by Indices of Economic Development and

	United States	United Kingdom	Belgium	Netherlands	Argentina
1. National income per capita: 1952-54 average (U.S. dollars)	1	3	2	4	5
2. Percent of gross national product from agriculture circa 1956	2	1	3	4	5
3. Percent of labor force in agriculture	3	1	2	4	5
4. Steel consumption per capita	1	2	3	4	6
Average rank[1]	1	1	3	4	5
5. Rate of population increase, 1953-56	8	1	2	4	9
6. Crude birth rate	8	1	2	4	6
7. Crude death rate	5	8	10	1	3
8. Infant mortality rate	3	2	5	1	6
9. Expectation of life at birth, male	3	2	5	1	7
10. Percent of population 65 years and older, circa 1950	3	2	1	4	8
11. Dependency ratio	7	2	1	6	3
12. Percent urban 20,000 and over	5	1	7	3	4
13. Demographic type	1	1	1	1	5
14. Index of child wastage	3	2	5	1	6
15. Index of human wastage in reproduction	4	2	5	1	7
16. Index of human wastage in production	5	2	6	1	7
17. Index of representation income	1	3	2	4	5

1. Ranked on the basis of an average rank for the four variables.

Source: Based on Table 1.

Specified Demographic Indices, for Selected Countries, circa 1950 to 1956

Argentina	Japan	Portugal	Mexico	Yugoslavia	Egypt	Philippines	Paraguay	India
5	8	7	6	-	11	9	10	12
5	6	7	-	8	9	10	12	11
5	7	6	10	12	8	11	9	13
6	5	9	8	7	11	10	-	12
5	6	7	8	9	10	11	12	13
9	5	3	12	7	11	9	12	5
6	3	5	12	9	11	7	13	10
3	2	10	12	7	13	4	6	8
6	4	9	8	10	13	12	7	11
7	4	6	10	8	11	9	-	12
8	7	5	11	6	13	12	9	10
3	8	4	11	5	10	12	13	9
4	6	9	-	11	8	2	10	12
5	5	5	9	5	11	11	9	11
6	4	7	9	8	10	-	-	11
7	6	3	10	8	9	-	-	11
7	3	3	10	8	9	-	-	11
5	8	7	6	-	11	9	10	12

Underdevelopment", undertaken by the Department of Geography and the Research Center in Economic Development and Cultural Change at the University of Chicago, in response to which this paper was prepared.

The various indices prepared, described, and discussed above are obviously no adequate substitute for direct measurement of economic activity. On the other hand, a number of the demographic indices seem highly related to level of economic development. The data for selected countries in Table 1 point both to the usefulness of demographic indices as indications of economic development and to their limitations. For the data in Table 1 fall far short of perfect correlation and point to the ambiguous character of a number of the indices (see Table 4).

It has not been possible within the limits of this assignment actually to attempt a rigorous quantitative evaluation of demographic rates as indices of economic development. A cursory analysis of the data in Table 1 based on rankings of the arbitrarily selected countries for the data presented in Table 4 does permit a number of at least tentative conclusions.[21]

First, the direct measures of economic activity used in Table 1, items 1 to 4, are reasonably consistent in ranking the arbitrarily selected nations by what may be presumed to be level of economic development. Second, some of the demographic rates are poor predictors of the economic measurements used. These include the rate of population increase, the crude birth rate, the crude death rate, the dependency ratio, and the percentage of population urban. Third, some of the demographic rates do appear to have a high order of relationship to the indices of economic activity. Among these are the infant mortality rate, expectation of life at birth, percentage of population 65 years old and over, and the three "wastage" indices, based on mortality. "Demographic type" seems to have discriminating power, but of a broad character that would admit only of very gross differentiation. The "index of relative development" produces, of course, the same ranking as per capita income and may be, despite its many limitations, the best single measure of relative economic development.

Additional research and analysis would, without question, improve the possibility of using demographic data as economic indicators. Such additional research is needed, in any case, both to illuminate economic development and demographic phenomena; and especially to improve our knowledge on the interrelations of demographic and economic variables, particularly in the underdeveloped areas.

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21. No more rigorous analysis such as a rank correlation analysis is undertaken because of the limited number and arbitrary character of the selection of the countries considered. The study under way by the Department of Geography and the Research Center in Economic Development and Cultural Change will collate the data for as many countries as possible and permit both a more comprehensive and more intensive analysis of the interrelationships of the economic and demographic indices.

NATIONALISM, GOVERNMENT, AND ECONOMIC GROWTH*

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I. Introduction

In this discussion we shall be concerned with newly independent countries which have emerged from colonial status in large part through the determined efforts of nationalist political leaders. Such leaders are faced with an overwhelming dilemma. They must reconcile the need for wide and popular participation in political life necessary to retain support. They also need highly integrated and effective leadership--an oligarchy, if they are to produce satisfactions such as more education, greater social welfare, and increases in real income. How to produce both wide participation and effective oligarchy is thus the problem facing nationalist political leaders. We are familiar with the radical totalitarian solution to this problem. Can we find an optimal solution which falls short of totalitarianism?

We shall seek to demonstrate that, given the nature of pressures and demands put upon nationalist political leaders, an optimal solution can be found which allows good sources of information, provision for effective participation, and at the same time effective organization.

Most colonial governments are social welfare governments. This means they provide a great deal in the way of social benefits; benefits, moreover, to which people become accustomed. Whatever the level of social welfare achieved, however, nationalists are professionally interested in making the public dissatisfied with them and promise other kinds of satisfactions as well. Such satisfactions include greater status through improved social mobility, i.e., access to higher power and prestige positions in the society, not the least of which are political positions occupied by expatriate officials. Once in office, the pressure of such expectations upon political leaders is intense, and they cast about for radical solutions. One solution is to seek rapid industrialization. This, in turn, presumes tight organizational control, which in fact limits access to political positions.

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* Although they are not to be held responsible for the discussion presented here, I wish to acknowledge the valuable assistance offered by colleagues who read and commented on this paper: Harry Eckstein, Ronald Coase, and Clifford Geertz.

II. Sources of Expectation--Social Welfare Colonialism

The justification of colonialism has been increasingly expressed in the social and economic benefits it has produced. Especially since the war, local areas are overrun with district medical officers, forestry officers, community development officers, cooperative and labor officers, veterinary officers, etc. Central government is composed of departmental establishments providing health, housing, town and country planning, and the usual concerns of the contemporary welfare state in the west. These services are run at reasonably efficient levels by expatriate officers, and people have come to expect their continual expansion as the justification of government itself.

Furthermore, there is financial assistance from the metropolitan power. Loans and assistance grants from F.I.D.E.S. in the French territories and the Colonial Development and Welfare funds in the British case, as well as shared costs for military forces, are among the tangible financial benefits received by colonial territories. With independence, a territory must find the technical personnel to fill the positions of expatriate officers and the finances to provide not only welfare and public services but to expand them. In addition, it must allocate some funds to its own military establishments.

The structural framework which political leaders inherit includes legislative establishments, cabinet government composed of departmental heads, and an effective civil service which is increasingly local in its recruitment. "Progress" is measured by the ability of local personnel to meet the internal tasks imposed on government and by the smoothness and flow of government business on the metropolitan model. To achieve this has been a concern for both nationalist leaders and colonial officials, and devolution of authority results in reconciliation of objectives between political leaders pushing for authority in the shortest possible time and colonial authorities seeking to prepare those leaders for effective government.

The legislative bodies provide for an expansion of shared political responsibility which facilitates the organization of political parties. The civil service opens its ranks to local recruitment. Indeed, a well-trained local civil service becomes a crucial organizational element in maintaining effective government when a transfer of power to nationalists takes place. Perhaps more than anything, however, colonial governments have been preoccupied with producing viable economies, less dependent upon a single cash crop, and possessing internal sources of savings, local investment, and markets. In the post-war development-conscious era, industrialization has been at least a tentative goal of colonial governments, unwilling as they are to make the drastic and forcible gestures which industrialization would require, because such gestures would place heavy reliance on coercion.

The situation is different for nationalists who see in industrialization the solution to a number of problems raised during the colonial period. Industralization promises to increase wealth, social mobility, and opportunity. Education can expand and national status improve. Industrialization as a goal means that obstacles to industrialization, whether in the form of institutional limitations or opposition to government, can be overridden because of the priority of service to the party and the state. Precisely because nationalists go in where colonialists fear to tread, however, the entire framework of

representative government with its integrated patterns of decision-making and execution is endangered. Support to nationalists becomes a matter not simply of volution, but of necessity, and the danger of government becoming omnivorous, of devouring all sources of pluralism and opposition, becomes very great, if political leaders bent on industrialization are not to become vulnerable. To remain exempt from vulnerability while marshalling the human and technical resources of a community takes highly effective leadership, a leadership more diversely skilled than that of the expatriates, who are replaced, whose technical proficiency was its own justification, and whose oligarchy was only challenged by the nationalists themselves.

III. Social Mobility, Recruitment, and Leadership

The discussion so far can be simply summarized. When nationalists achieve self-government and succeed their colonial predecessors, the public expects continuation and expansion of benefits. They also expect increases in participation, access to power and prestige positions in government and other forms of social life, and a speeding up of the tempo of social mobility. Nationalists are capable of absorbing some people into government as they replace departed expatriate officials. They can expand the number of positions in party and government. They can focus on development schemes of a local nature to provide both change and positions for local groups. Beyond a certain point, however, unless the economy is dynamically expanding, they can merely circulate elites.

Even the circulation of elites is limited because stabilization of leadership is required if effective government is to be carried out, and the number of skilled and experienced political leaders who have some knowledge of government is necessarily small. As stabilization appears in the leadership, thereby cutting off one channel to power and prestige, other alternative power and prestige positions need to be created. The first concern of a new nationalist government, then, is a recruitment concern. The question is, who will be recruited, and on what basis, to ensure both effective government and devotion to leaders, as the latter attempt to expand both social welfare and opportunity at the higher end of the stratification hierarchy. Participation in government seems to be characteristically determined in terms of the following: first, the importance of people whose support of the regime is required. These will determine the effectiveness with which evaluations of the political situation can be made, and decision-making will be realistic. The criteria of recruitment indicate to what extent the regime will place high value on basic standards of rationality, expertise, and universalism. We can list these criteria, bearing in mind that they have important consequences for government.

1. On the basis of political power. This means that people who have some following are politically significant, and to fail to recruit them may well pose future problems for the government.

2. On the basis of party loyalty. Those who have served the party well expect that the party will care for them (and sometimes for their families). Further, the party relies on them for carrying out party and government tasks which are necessary. Party loyalty needs to be rewarded if party discipline is to develop and maintain itself. Expulsion from the party would involve severe deprivation.

3. On the basis of skill and talent. Those with the necessary training to do management and organizational tasks, or tasks necessary for the operation of technical services, need to be recruited. In almost all newly developing countries, the job of increasing such cadres is the first target of government.

One indication of the status of a new government is the degree it mixes its proportions of these three types of recruitment. In many instances, the ministerial system of government is very useful here, since it allows political decisions to be made by political leaders who have been rewarded for party loyalty with cabinet posts. They in turn rely for their own sustained tenure on the effectiveness of their civil service staff or other experts who remain subordinate to them. Equally, a host of advisory boards, committees, etc., can be set up on which people with political power (having an important following) can be put. If there are important issues of land tenure, for example, a land tenure commission might become advisory to a minister of land tenure or a minister of local government. If the trade unions are important, some trade union leaders might be on a labor advisory commission to the minister of trade and labor, or be given special tasks, such as the preparation of memoranda on labor conditions, housing, and the like. The government which is effectively able to blend these three forms of recruitment can promote the mutual interdependence of voluntary associations and semi-government commissions in actual participation in government.

The ability to do these things presumes a fairly extensive governmental framework. Because a government needs a great deal of trial and error in order to chart its course, its strength and structure must be relatively secure. Such strength is a function of political party support, which in turn depends upon recruitment. There is a tendency for parties to become the private patrimony of the leader. The party leader tries to alter the social stratification system by making its curve less sharp and reducing the upper strata. He needs to create a new managerial and bureaucratic elite. As Eisenstadt points out, there is then a marked tendency for the political elite and the bureaucracy "to direct all the social developments of the country, especially the raising of the standard of living and the development of new occupations and of mobility within them. In this way they hope to maintain their hold on most potential centers of power and to control their development. But these attempts may defeat their own ends, as the close control exercised by the bureaucracy may undermine the efforts of economic development, create more aspirants to new posts, etc., than are available and thus put the bureaucracy itself in an insecure position."[1] This is a particularly acute problem where nationalism is the main vehicle for national solidarity, and former nationalist political leaders now find themselves in positions of political responsibility.

In most of the new countries, previous power and prestige holders either came from outside the system entirely, as in the case of former colonial territories, or entry was based upon highly ascriptive grounds. The modern nationalist movements of today attack traditional oligarchies and replace them with

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1. See S. N. Eisenstadt, "Changes in Patterns of Stratification Attendant on Attainment of Political Independence", Transactions of the Third World Congress of Sociology, 1956, Vol. II, pp. 32-41.

their own. The main difference between these oligarchies is that in the new ones recruitment is on the basis of political power, party loyalty, or expertise. Each of these categories of entry are relatively democratic. People are not barred on such grounds as birth, color, or caste, unless they are regarded as foreigners or aliens, as are the Lebanese, Syrians, and Europeans in West Africa, or the Indians in East Africa. Sustained tenure of office depends upon achievement, which may be demonstrated in the skill by which a leader rallies others to support the government, or the skill in doing a particular administrative or entrepreneurial task. But in each case, old restrictions have been swept away. Only if the category of party loyalty pre-empts all others is the new oligarchy in virtually the same position as the old one.

Indeed, it is in terms of social mobility and universalistic recruitment that democracy in such areas ought to be understood. More important than political rights of subjects and checks over the executive is the very faith that equality of opportunity has been granted. Equal opportunity demands that the government concentrate its energies on such forms of development as education; this is, in fact, normally the first interest of any new government. Through education come the skills and talents which will foster other types of development.

The character of a political party is shaped in part by the quality of its leadership and its membership. To take the latter first, if the party is a mass party, recruiting from widely differing parts of the social stratification system, it can stand for few specific objectives but requires general targets. Normally, mass nationalist movements are of this nature. They appeal to widely differing groups which nevertheless are in the party. On the other hand, class parties which recruit more narrowly from some class can tolerate a greater specificity within the program.

Elite parties tend to be totalitarian insofar as they must capture government and put forward measures without mass support behind them, or where there is a multi-party system, be strategically placed in coalition governments.

Mass national movements provide a wide range of appeals to voters. Such movements are relatively stable coalitions of interests in many western countries and form loosely organized political parties, as in the United States. They tend to be less stable in developing countries, because each task with which the movement must deal helps to produce friction by favoring one or another group within the movement itself. Hence, a mass political movement which wishes to produce economic development requires some special social cement. It needs a monopoly over patronage. It needs to have some of the characteristics of a non-exclusive elite. It needs extensive decentralization, so that it becomes a village and local primary group, which, in the basic unit of organization, provides constant face-to-face association. It cannot have too much horizontal communication, or control over the party would become so decentralized that it would jeopardize the top leadership.

For maximum autonomy, such a movement or party needs to identify an enemy and produce myths of a new civilization. To the degree that it is organized around a single personal and fragile leader, it will be dependent upon the sense of personal identification members have with the leader himself.

If the leadership is bureaucratic and durable, it will need a moderate yet coherent ideology, which supplies some of the same functions. Socialist parties are often of this type.

Elite parties are common. These may be based on an officer group or military caste, or on landowning or special interest groups. They may be based upon a professional, educated intelligentsia. In many instances this last type of elite party (professional elite) is the predecessor to mass parties, i.e., they prepare the ground for a more rude, populist, socially mobile group to take over.

The combination of an elite core with a mass following is the most effective for development purposes. It provides the bureaucratic cadres to run the party, the government, and act as the coordinating arm of the state, while the mass party organization provides the informational core. The differences and antagonisms between local party factions provide both competition in ideas and allow the membership to serve as a communications source.

This works best where there is a personal and fragile leader at the top, and the elite has not become so bureaucratized that it stifles initiative within the party itself. Personal and fragile leaders, furthermore, manipulate the elite cadres against the followers, in order to prevent premature loss of power.

In mass parties with elite cadres, there is an inevitable struggle for power between older and new elites. The form this takes depends upon (1) whether the party is urban dominant or rural dominant, and (2) whether the party is regional/ethnic or territorial in focus. If the party is urban dominant, the "quality" of the elite must be based upon commercial skill or other related skills, which in fact are useful for development. If the party is rural dominant, such an elite may be attacked by the rural peasantry or by the "quality" elite of the traditional-minded rural groups. Hence, rural-urban disputes are common. Each has its own development commitments. Where such situations occur, either an urban dominant party with an urban elite must directly attack the traditional elite or modernize it by making some provisions for rural reform in its program.

If the party is itself territorial in focus, local elites may demand more recognition. If it is regional or ethnic, the elites are more often than not based on ascriptive criteria and promote tribalism or some form of regional parochialism which can threaten both party leadership and following. Ideally, the party with an urban elite, organized around a territorial focus on a mass basis, produces the most effective and viable government.

Such a party then will have a wide range of information sources. As a mass party, it should be decentralized in its organization but hierarchical in its pattern of communication. It should be centralized in its decision-making and assist government in coordination. With a mass basis it provides government with a measure of stability. It furthermore serves as a basis for social mobility in society at large. It incorporates power groups and absorbs them. It provides patronage to its own members and maintains their support. If too strictly organized, such a party can become a punitive arm of the state. If it does, then the costs of coercion go up, and a very nasty situation can arise.

Barring that situation, what we have just described is the typical nationalist, aggressive, Congress-type political party which can be found in India, Indonesia, French West Africa, Ghana, Nigeria, Malaya, and elsewhere.

IV. Government

By government, we mean the most generalized membership unit possessing both defined responsibilities for the maintenance of the system of which it is a part, and a practical monopoly of coercive powers. Government refers to a concrete group of people whose job is to keep the social order intact. They must not let it be destroyed either by internal or by external forces. To enable them to do this, they require authority or power recognized by the public as legitimate, which gives them ultimate powers of deciding right and wrong. It is to these ends that a practical monopoly of coercive powers is necessary.

All governments need devices which can effectively produce choices. To make choices effectively, governments require knowledge and information about society generally, about the limits of public tolerance, and about the costs of development in terms of alternative courses of action. Government is in the business, so to speak, of estimating costs against consequences. Political costs and political consequences will therefore be the underlying theme of this discussion.

In systems where there is representative government, greater information is probably available to government than in other systems. However, in underdeveloped areas, representative institutions foster local particularism, opposition, and even separatism. Politicians, in order to gain supporters, search for issues which divide as well as amalgamate a public. Furthermore, where there is popular sovereignty, government actions tend necessarily to be defined within the institutional limits of social life. This must be so, or the government will lose its power. The pace of government can only be so fast as the electoral groups which provide the recurring majorities will permit.

On the other hand, where political arrangements give government a great deal of autonomy and where government has the freedom to choose its supporters, the problem of recurrent majorities enters only incidentally. Government actions are determined by fewer limitations. Normally such governments obliterate national differences, enforce integration, and are relatively insensitive to changes in public attitudes except where those attitudes entail threats to government itself. On the other hand, knowledge and information are not so freely available to governments that are more or less authoritarian. Most of all, where government acts as a leader, considerable estrangement will persist between some sectors of the community and government itself. These also represent costs to the regime.

Thus the dilemma in most underdeveloped countries is clear. Few people in underdeveloped areas are willing or able to wait the "requisite" number of years for a "natural" development process to take place.[2] Indeed, if they

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2. By natural, we refer to the classic western pattern of private investment and entrepreneurship. This is one reason why forced savings,

did, most would still find themselves disproportionately behind the western industrial nations. Few countries have the resources to utilize the latest technological innovations today that imperial Germany was able to do with regard to nineteenth century Britain. Western nations, with their increasingly high living standards, are a perpetual rebuke to those in new countries only beginning massive development. Questions of national pride and racial sensitivity make the tenure of representative governments uncertain if they do not act strongly and endanger them if they do. Authoritarian governments mix the proportions of nationalism and ideology so that sacrifice and self-denial are regarded as social virtues. It is here that nationalist political parties become so important, especially where representative government is only partially effective, and nationalism becomes the new religion, with its own galaxy of devils, angels, ascetics, militants, and priesthood. Such nationalist parties are modern in their organization and spirit. Duverger is right when he notes two essential characteristics of our time: "the revival of groups, the rebirth of religions... Today the term party includes veritable churches with their clergy, their faithful, their belief, their orthodoxy, their intolerance."[3]

The big problem facing government, therefore, is how to remain accountable to the public without letting the public dictate the pace of change. Indeed, this is the meaning of the expression, "realistic" goals. In order to achieve such goals, governments must have some means of determining how political parties and the public would accept the duties and obligations which they entail. Where government and public possess adequate information about one another, the outcome of a particular goal can be judged more adequately by both.

Governments engaged in development are, therefore, governments in search of certainty. They want information, and they seek to control that which might endanger their goals.

V. Elements of Government Viability[4]

The nature of party membership and leadership decides whether the government will be able to set goals autonomously, i.e., without much reference to public demands, or will have to keep its goals set within their tolerance. The degree of governmental autonomy is thus our first consideration.

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heavy discipline, and government investment have been more clearly successful in producing self-sustained economic growth than primarily private enterprise. Indeed, by "straddling" the issues of planning and industrialization on partly private and partly public terms, India has found herself in profound economic difficulties. By contrast, China has been more effective in efforts towards industrialization.

3. See M. Duverger, Political Parties, London, 1954, pp. 61-62.

4. This discussion is focussed around five structural requisites of government: (a) accountability and consent; (b) authoritative decision-making; (c) political recruitment and role assignment; (d) resource determination and revenue allocation; and (e) coercion and punishment. For a

A. Accountability and Consent

Autonomy in government is a function of accountability. To the degree that government is not accountable to parties, pressure groups, special interests, etc., it is free to take what decisions it likes.

In effectively working representative government, accountability is regular and defined in legislative organs and a popular electoral system. Government needs the consent of some group in the legislature, whether a party majority or a coalition, before it can take action.

In many underdeveloped areas where there are large populations or a large territory, or where there are significant cleavages along ethnic or religious or regional lines, each group in the system wants a check upon government autonomy. Hence, federalism is a popular system because it builds limitations on the autonomy of government into the basic organization of government itself.

Where there is a mass party, territorial in scope, and with personal and fragile leadership occupying governmental positions, the normal procedure is to produce a federal system in form, with little real accountability to regions or regional representatives. In a multi-party situation, accountability organs help the opposition parties and provide them with independent sources of power. In the latter instances, extensive accountability on the part of government weakens its preoccupation with development. It must pay more attention to local needs. It may then have to spend a large proportion of its budget upon social welfare and local development, much of which may be considered part of general development in one sense but may retard the pace of net savings for investment.

To the extent that development takes place through government, the civil service is of basic importance as an accountability group. The bureaucracy will, under those circumstances, assume a critical significance and often engage in a deep struggle with the party or parties which operate government. The civil service is mostly oriented towards "task-performance". Its criteria are efficiency and skill. The more effective the civil service, the more the government relies on it for carrying out development objectives. The more it is relied upon, the more conscious are civil servants of their powers. This then is a special elite which is in a sense subordinate to government, but which can hold government at its mercy. If a struggle over accountability should break out between party and bureaucracy and become intense enough, it can easily produce chaos on the one hand, or totalitarianism on the other; either a totalitarianism of a bureaucratic oligarchy, or a party dictatorship. The special

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methodological statement which expresses the variables under discussion here, see my article, "A Comparative Method for the Study of Politics", American Journal of Sociology, November 1958. These structural requisites and the definition of government used here were worked out by the author and his colleagues on the West African Comparative Analysis Project. This Project was made possible through the generosity of the Carnegie Corporation, to whom acknowledgment is gratefully given.

instance where elements of both combine to produce a "mixed type" of party-bureaucracy is exemplified in those areas where army officers form the nucleus of a political party, take over the government, and blend elements of both.

A third major source of accountability of government is private industry. That it is right and proper to act in such a way as not to antagonize business interests has acquired for some in the West the character of a doctrine. Leaders in newly developing countries take a dim view of it; it is what they sometimes mean by imperialism. Nevertheless, some accountability of government in newly developing areas is necessary if private industry is to be attracted. It means that certain restrictions on the autonomy of government are at least implicit in the situation. Decisions not to nationalize industry, or to give tax rebates, or to discipline the labor force, or to promote training and welfare schemes may all be involved. More important, development decisions become dependent upon the actions of private investors. If resources are scarce, as they invariably are, government may reduce its own entrepreneurial activities in light of private development schemes.

It is precisely the effort to reduce these aspects of accountability that have led many governments to introduce the mixed government-private corporation. A general authority is set up, relatively independent of ordinary government control. Such corporations are under statute with government putting up a proportion of the capital in a particular enterprise out of the corporation's funds, while private entrepreneurs put up the rest. Run on a purely commercial basis, government has a policy stake, yet is less accountable to private investors. The fear of private investors is mostly a hangover from Marxian conceptions of exploitation, for almost any political party in developing territories uses some Marxian criteria in evaluating private enterprise, even where party and government leaders want private capital badly.

The most important feature of accountability, then, is that it indicates the groups to which government feels itself responsible. Government may become impatient with accountability, which limits the freedom and autonomy of decision-makers and tempers their decisions and their plans by potential opposition. In the process of development and planning, government may try to bypass such groups and create new ones more amenable to government control and manipulation. Hence, it is possible to reduce the position of an entrenched and hostile chamber of commerce, for instance, by creating new and more amenable business and cooperative associations having closer links to the centers of power than the chamber of commerce. The latter gradually becomes stifled and loses influence. Both the form and the content of accountability are therefore important, because they profoundly affect the pattern of decision-making on the part of government itself.

B. Authoritative Decision-Making

Decision-making by government involves the posing of alternatives and the selection of one for effectuation. Decision-making is prompted by demands made upon government from outside or demands placed upon decision-makers by their own plans. Decision-making may be limited to highly general issues. That is to say, its scope might be very broad, or it might be very detailed.

Where its scope is broad, it is left to the bureacracy or party to make a whole range of secondary decisions pertaining to the primary decisions themselves. Or detailed supervision may be left to the party. Hence, the method of decision-making and the scope of decision-making both help to determine the significance of both party and bureacracy in the system.

Decision-making may be centralized or decentralized. Normally, it is more centralized where there is unitary government, and less so where there is a federal system. Decentralized decision-making may take some of the decision-making burden off central government, or it may complicate matters for government. The first instance occurs where local solutions are found for local problems. The second results where local solutions are not forthcoming, and government spends large sums in grant-in-aid, gifts, or pork-barrel operations, because it becomes politically impossible to do otherwise. Development decisions may be held up because of local options and interests.

The range and scope of decision-making can be determined by taking a sample of developmental decisions. Some decisions will be in the form of framework legislation. Here, broad enabling legislation is undertaken with flexibility introduced through decentralized decision-making procedures. Such decentralization may occur through independent agencies. It may serve simply to stimulate economic growth in the private sphere. It may serve to channel self help and community projects at the local level. Framework legislation may involve considerable integration and planning, yet provide scope for decision-making initiative beyond the precincts of the central government itself.

Other decisions will be in the form of regional legislation. Here, the question is the extent to which the center concerns itself with regional matters or allows the regions (or local areas) decision-making autonomy. Regional legislation can be of the framework type or supervisory.

Supervisory legislation involves careful and continuous control by government. It means that a heavy decision-making burden is imposed on government.

Entrepreneurial legislation can be of the framework or supervisory type. Here, the government itself engages in economic activity. It may range from the operation of airlines, steamship companies, social services, to manufacturing operations, mining, etc. If entrepreneurial legislation is combined with supervisory legislation, the government requires an exceptionally well-trained bureaucracy, with corps of technical specialists and planners. If entrepreneurial legislation is undertaken within the context of framework legislation, integration of efforts may be possible through financial controls such as grants-in-aid.[5]

The more government can decentralize its decisions and restrict itself to the most important planning and political issues, the more it is likely to be efficient in tackling developmental objectives. Once again, it is important to point out the significance of party. If the recruitment of decision-makers is on an elite basis only, purely developmental considerations may lead to a great deal of trouble, because they may not accord with public sentiment. With a

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5. Supervisory and entrepreneurial legislation taken together reinforce the tendency towards government omnivorousness.

mass party from which decision-makers are recruited, the temptation to use development as a huge pork-barrel is very great, precisely because public sentiment is well known and must be manipulated.

C. Political Recruitment and Role Assignment

Political recruitment and role assignment can here be described in terms of its method. Is political recruitment on the basis of universal suffrage, voting constituencies, and competitive parties? Is there a western pattern of elections? Are roles assigned on the basis of plurality voting? To what extent are roles assigned through the vote, and to what extent by other means (co-option, appointment, bureaucratic promotion and transfer, etc.)? If there is a regular voting system, is the pattern one of single member constituencies or plural member constituencies? Is there a single ballot system or a list system? All these elements have a part to play in the analysis of government and how it operates. [6]

Recognizing the importance of such issues, however, we shall be more concerned here with political recruitment as it provides satisfactions to the members of a party. We shall consider role assignment on the basis of qualities necessary to undertake political jobs.

We indicated earlier that the characteristic pattern of newly developing governments is that there is an immediate expansion of "jobs for the boys" and a circulation of elites consequent upon coming to power. This situation rapidly stabilizes itself, and the members of government represent a party oligarchy. Whether there is a single or multiple party system, the same problem arises. The party oligarchy which controls government must still provide a flow of satisfactions (utilities) to party members, party supporters, and eventually the general public. Where there is universal suffrage and a legal opposition, the oligarchy finds it expedient to expand the range and number of positions open to party followers.

If there are periodic and genuine elections, this provides specific time intervals of a political nature. These time intervals tend to minimize the attractiveness of long-term planning. Projects may be requested by the people of an important constituency. In general, there is a bias against projects with a long postponed economic pay-off, unless there is considerable outside capital.

Where elections are relatively meaningless and government does not have to contend with a regular machinery for its replacement, it can take a much longer view. Through forced savings and disciplinary measures, it may concentrate on the development of primary facilities and heavy industry, on the Soviet model.

The truly multi-party system of recruitment tends to sponsor governments which set goals in accordance with public perspective. Hence, there will be an emphasis on agricultural and land reform, commerce and distribution (retail trade), light industry. Government policy is devoted towards the

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6. Duverger, op. cit., pp. 99-101; and A. Downs, An Economic Theory of Democracy, New York, 1957.

expansion of opportunity on a host of fronts, depending upon pressure groups and what is regarded as having the most influence over voters.

If capital is readily available to the private sector, this may increase and promote rapid economic growth, with government then in the role of advisor, mediator, and possibly stimulant, while remaining concerned with housing, town planning, health and education measures, which loom large because rewards so distributed gain voters' support. Here, the role of new governments is far more complex than in 18th and 19th century England, for example. Then, there was a very limited franchise; government was accountable to few. Matters such as education were left mostly to private religious bodies. Health was at best left to what local authorities there were. Public works were mostly private, unless they concerned military operations in some manner. Justice was in the main locally administered.

Few newly developing countries with universal suffrage can ignore a direct concern with these matters, as could 17th and 18th century governments. Few have, moreover, the resources and talents to embark on major development programs in the private sector. Government tends to maximize available skills by recruiting them into the civil service, where the same set of skills can be utilized now for project A, and again for project B. How government will try to integrate its resources and talents with programs of development which rely on outside capital will depend partly upon how the party system operates.

Multi-party systems, tied as they are to recurrent majorities, as we have indicated earlier, tend to favor the employment of as much outside capital as is possible.

Where a single party prevails, the normal pattern of electoral recruitment is less significant. There the allocation of offices must be made in accord with factions in the party. However, this results in pressures to add government posts or expand the area of government control. Expansion of such posts requires new enterprises, in the first instance, or a shuffling of roles, so that old elites are abolished.

Where there is, in effect, single party democracy, the combination of mixed public and private entrepreneurship is highly regarded. This implies that party discipline is not overly tight, and that factionalism and internal party independence is possible. Here, too, a balance between long-run planning and immediate social welfare is more likely to be struck. The party can cajole, exhort, and otherwise ensure acceptance of long-term investment on the part of the government. It can do the ideological and propaganda work in order to win support. As it does so, it helps to produce a perspective and knowledge about economic development itself.

Single party democratic systems are based upon support from recurrent majorities among factions in the party. Normally, they are pragmatic and socialist. Not afraid of private capital, they seek it actively and employ it side by side with government investment.

Where there is a single party totalitarian system, i.e., where the electoral system is a sham, it is possible for government to undertake long-range

planning. Here, the widespread use of private capital is not favored, unless it can be directly controlled. Such controls normally frighten away would-be investors.

Hence, basic party structure and its significance in recruitment directly affect the direction of development and the forms which it can take.

We have not discussed the role of outside political and technical personnel. It can be stated as a principle that they are, of course, useful and valuable. They may, however, be received with scant courtesy by political leaders of lesser rank, because outsiders occupy jobs which might otherwise go to them and represent a source of authority which they often resent. Hence, there has often been a certain awkwardness about the role of outside experts. If the government conforms to the British model, such experts are often easy to employ as civil servants on contract, especially in the technical services of administrative departments like agriculture, forestry, rural development, and the like. If a new country comes into being after some bloodshed with the colonial regime, as in the case of Indonesia, the employment of outside experts becomes a delicate matter for the government.

D. Resource Determination and Revenue Allocation

Resource determination and revenue allocation include the kinds of economic activity pursued by government. We are concerned with how government defines and locates important resources, whether basic resources such as mineral, or human resources such as manpower, skills, etc. Revenue allocation refers to the distribution of income in the system, including taxation policy, government enterprise, etc. Involved in this are the following kinds of government policy making: regulation of consumption and savings, fiscal planning, currency stabilization, and credit facilitation and taxation policy which serve developmental ends. Political difficulties arise where the economy is dependent upon the production of a single cash drop, as in the case of Ghana, especially where that cash crop is grown only in a particular part of the country. The government cannot allow such a source of wealth to go untapped for development purposes.

Another important range of government activity concerns tariff policies, regulation of profits, customs and excise, and the range of related entrepreneurial activities which government can undertake in its own operations, such as government-owned railways, marketing boards, participation in independent corporations. In addition, there are basic resource surveys, which involve the search for new products, new methods of manufacture, geological surveys leading to discovery of mineral resources, and development of hydroelectric resources. Finally, there is the range of regulatory legislation which deals with local markets, regulation of trade, inspection of cash crops, supervision of cattle or other livestock, etc.

The viability of government is dependent in great measure on basic financial policy. What are the reserve and lending policies of the banks? Is there credit available for rural development and for small entrepreneurs?

Many governments have a strong tendency to expand control over the system through fiscal policy. They can then decide on major economic

priorities with less reference to the politics of the situation. If the decision is to concentrate on heavy industrialization, for example, taxation and fiscal policy can then be devoted to that end.

Here the most difficult problem facing government arises if it is decided that forced savings should be the basis of economic growth. Politically, the government runs into the problem of maintaining support, while it penalizes the population now for promises in the future.

A partially ameliorating device which kills several birds with one stone is to use taxation policy to redistribute income. This may simply involve lowering the standards of the few. Inhibitions to this process are great, when many of the wealthiest members of a community are the most skilled in business enterprise. The Chinese have, to some extent, been able to capitalize on this situation, by keeping former owners of plants on as managers. Such former owners now become "ordinary" citizens, much to the gratification of the public, while the former owners, knowing the alternative fate in store for them if they object, are grateful for the opportunity to cooperate.

Often, developing countries do not have large enough internal markets to support major industry. It is possible then for several governments to form a common market. A common market tends to stimulate trade, raising the level of effective demand, which in turn produces greater investment opportunities. In time, if a government has been engaged in primary and secondary development activities, the basis for industrialization might develop. The nations which have the best opportunities for this are those which have been under a common colonial administration or have been dominated by the same colonial power. Hence, such arrangements are possible, for example, with Commonwealth countries more effectively than elsewhere.

The effectiveness of economic policy in government is, of course, the basis for development itself. If the question of "viability" of a government is at all pertinent, this is the place to raise it. Are money and banking, regulatory policies, taxation, etc., conducive to development, or not? What shall be the proportion of savings to be invested in social welfare, in heavy industry, etc.? What are the primary sources of new wealth?

In general, it can be said that the higher the rate of forced savings a government can get away with, the more rapid the rate of development, if decision-makers have enough talented and skilled advisors and enough discipline, so that resources are not simply wasted on jobs for the boys, abortive schemes, and grandiose politically popular projects. One way to ensure proper use of such resources is the mixed public corporation, where a high proportion of investment comes from private sources.

Politically, a great deal depends upon the methods by which a government determines its budget. Important questions are: who prepares it--civil servants, politicians, financial experts outside of the government? Is it a major planning budget--does it provide a schedule of future project expenditures? How can it be modified--does this have to go through a parliament, or a planning commission, or a special committee?

Particularly if heavy government expenditures are contemplated and there is little in the way of external financial assistance, the tendency of government is to choose bootstrap economic measures. In this respect, labor does become a source of value. Such an approach is legitimized through the use of Marxian economic doctrine. The use of raw labor power to build roads, dams, irrigation projects, etc., is an initial source of wealth. Some nations have tried to use voluntary labor. Normally, this is only possible where very skilled manipulators of youth movements and voluntary associations can build up a sense of zeal and selflessness. In some areas, there are traditional forms of customary labor. In many tribal groups, a certain number of days are reserved for communal labor. If labor as a creator of goods becomes a major economic preoccupation of the regime, and it becomes simply a resource to allocate along with others, this normally involves extensive control by government itself.

E. Coercion and Punishment

This brings up the last aspect of government that we shall discuss: coercion and punishment. Throughout this paper, a main theme has evolved around the advantages and disadvantages of the mass party in control of government. Leaders search for certainty; social life becomes organized; those who go along with the regime receive benefits and rewards; purpose and direction is provided; development of the state becomes the new religion in which the dominant political party is the home of the faithful, and the messiah is the party leader who controls the government. Within this general framework there can be considerable freedom, often even political freedom, although this depends partly on how determined the leadership is to promote goals involving postponed returns and forced savings.

The point at which public resistance to government becomes serious is the point at which coercion and punishment enter the picture. All governments have means of disciplining deviants in the society; some, however, use coercion as the key to certainty, instead of relying upon genuine support by the public. It is here that the multi-party representative governments have a great advantage over the single-party systems. If development in multi-party representative government is slowed to the pace of recurrent majorities, it means that contemporary rewards cannot be displaced by future expectations. The stimulation of economic development must in large part come from the public itself. Heavy decision-making burdens are not the sole responsibility of government. Government knows pretty clearly what different sectors of the public want, and can manipulate accordingly. This may slow the pace of certain types of development, especially in heavy industry, but it can help produce voluntary support for the regime.

It is, however, only under exceptional circumstances that rapid development can occur under those terms. The nation which can afford democracy while attempting to produce rapid economic change is rather rare. Most governments try to maintain their own powers and discipline the public in order to achieve more rapid development. The assumption here is that such measures require a strong ideological commitment. Such a commitment is normally carried through a mass party with a determined elite. The elite recognizes that at least in the short run, ramrod measures may be necessary to organize the

public for development purposes. An ideology is selected which supplies morality and legitimacy for coercive actions. Justification takes the position that strict measures are necessary in order to produce a satisfactory social life in the future. Coercion would thus help to produce greater public solidarity and the reduction of parochialism. To the extent that coercion is applied to achieve conformity, expenditures for weapons, security police, and army rise. Available resources for development are thereby reduced. If an opposition arises which increases the cost of coercion, it is the opposition which is expendable. Investment in propaganda and education must therefore be high enough and measures effective enough to reduce opposition, and by so doing, reduce the cost of punitive measures. This result rarely occurs, however.

One index of the degree of coercion being used by a government is the degree of repressive, as distinct from restitutive, law in the system. What is the extent of crimes against the state, or against the social order, which require symbolic punishment, and what is the extent of civil crimes for which restitution can be made? The greater the degree of repressive law, the greater the coercion in the system. In the Soviet Union during wartime, the extreme example was afforded by those shot for consistent lateness at work. Even lack of enthusiasm can be taken for sabotage.

The upper ceiling on coercive action is reached when the costs of coercion begin to run higher than net developmental gains. The system which relies heavily on coercion is less efficient, has the greatest costs, and stifles imagination and initiative.

VI. The Tendency towards Omnivorousness

We have said that government requires both knowledge of what people want and desire and a means of checking upon the results of an action. It needs a constant flow of information between itself and the public it serves. Where there is popular sovereignty and representative government, information is more freely available to government, but there is restriction upon the freedom of government itself. Where popular sovereignty is vitiated by authoritarianism of one form or another, information is reduced, but freedom of action is increased.

The most important sources of information are the political parties. These are the most regularized means of determining public demands. Parties in two or multi-party representative systems are more transmitters of information than coordinators of public action. The party in the single-party system is more a coordinator of public activity. But in both systems, parties have some information and coordination roles.

The more government requires a party to perform a coordinating role, the less effective will the party be in its information role. Such a role would be left to an opposition party. In systems where opposition parties do not exist, the problem of information is a severe one, and devices such as self-criticism and group discussion may serve.

None of the new governments are without opposition parties to face, though few opposition parties are effective ones in the sense that they can

threaten a government with downfall. The typical situation seems to favor a two-party system, where the opposition is allowed participation in a legislature. Checks on government are provided by lax control over the backbench of the government party, so that it could conceivably combine with the opposition and therefore overthrow the government. Usually, the government has enough support to put through measures, some of which are bound to be unpopular, without having to take coercive measures. The opposition provides the information, while the party provides coordination (along with the bureaucracy) and serves to disseminate information about government down into the constituencies. Checks on government are limited to a potential coalition of the backbench of the parliamentary party and a nominal opposition.

Here, government has the advantages of a form of one-party government which focuses on national integration, allows wide representation, and retains oligarchy without incurring the costs of dictatorship. It gives the government considerable autonomy. Turkey, after the revolution, was a good example of such a government which, after considerable development occurred, created a genuine multi-party system.

Party and government then recruit the talents which will serve the ends of economic and social development. They form the modern organizational nucleus. Depending upon the quality of the leadership, they demonstrate initiative, skill, and ability.

With increasing control, there is an increase in certainty. This certainty refers both to public expectations and government. Government is increasingly able to control the results of its actions. If such results are manifested in a resurgence of traditionalism, it directs its attack against the past and uses local government, financial, and voluntary associations to defeat a recrudescence of "reactionary" groups. If there is no increase in control, local initiative may foster local particularism,and eventually the position of the central government may be in jeopardy.

One difficulty in such situations is that the more government controls, the more its costs rise. This is true in monetary terms and in real expenditures. It also is true in terms of consumption of talents and skills. In most newly developing systems, both financial resources and skills and talents are narrowly limited, so that by absorbing both money and skill, government restricts the degree of autonomous enterprise left outside the government sphere. Only the lesser talents remain outside the structure of government, and sources of wealth become reserves to be tapped by government, rather than employed on a private basis according to the skill and judgment of an entrepreneur.

Not only do costs rise, but the proportion of value received declines. Governments engaged in simultaneous planning on a number of fronts rarely make the most efficient use of their financial and human resources. There is error from bad management, error in bad planning. Rare is the government which can increase its efficiency by decreasing its control, thereby releasing reserves of wealth and talent to private hands; mostly, the reverse is true.

Since increasing costs must be borne by the public, there is normally a rise of dissatisfaction in all the organized sectors of social life. Social life,

therefore, may even be kept constantly in flux, so that stable organizations which might be focal points of resentment cannot develop. The greater the measure of control, the more burdensome the planning requirements. More planning requires more information and certainty. The quest for certainty leads to greater control. This, then, is the tendency towards omnivorousness.

VII. Summary and Conclusions

We have first discussed the role of government vis-a-vis developing society. Society has been viewed in terms of social stratification. The motivation for action has been defined as the striving of people generally to speed up social mobility. Ultimately, the strength of a government is based upon its ability to promote that end.

The satisfactions or dissatisfactions of people are expressed through organizations. Such organizations are political parties in the first instance, and relevant accountability groups in the second. Parties represent a regularized channel of communication to government, a source of recruitment to government, and a coordination arm of government.

Depending upon social stratification, composition of party membership, and leadership in party and government, accountability will be formal or informal, unitary or federal, centralized or decentralized. Where accountability is informal and at the discretion of the government, government has considerable autonomy. If accountability is limited, decision-making is restricted to the top levels of government. If it is extensive, it may be shifted in some form to various levels of government. If communications are both horizontal and vertical, much of the decision-making burden will be dispersed. If there are only vertical communications, central government is likely to control decisions of both wide and narrow range, and large and small scope. In addition to "ecological" or geographic centralization or decentralization of decision-making, it may be functional as well, i.e., divided between bureaucracy and party organs, private entrepreneurs, etc.

Much depends upon the pattern of recruitment to office. Single party electoral systems using the parliamentary form have some of the communications benefits of an opposition party, without being accountable to it. Multiparty systems using the parliamentary form require concurrent majorities, so that decision-making must be close to the demands of the public. Single party systems have a tendency toward increasing omnivorousness, especially where there is universal suffrage.

Systems of any type which are attempting rapid development require bureaucrats and party personnel with managerial skills. Such skills are both organizational and technical. The pattern of role assignment in part will determine norms for recruitment in the system at large and affect the spread of ascription or achievement criteria. Such recruitment becomes particularly important in systems using fiscal controls and state entrepreneurial activities. Both managerial and technical skills become all-important where planning budgets are utilized.

Where fiscal controls are being utilized, government will seek to reduce accountability to the degree that decision-makers use forced savings and labor.

Distributions of satisfaction may be in large measure initially accomplished through taxation policy to reapportion wealth. Important entrepreneurial activities are needed to provide economic growth and power and prestige positions in the system. Where this is done through private means, government becomes less precarious, and the stake of the public in the system is enhanced. Where it is done purely by government means, government must control all aspects of social life where a potential opposition can arise. Normally, mixed types of independent corporations and joint private and public investment are characteristic.

In addition, development needs to provide tangible benefits. Hence, considerable proportions of the budget are allocated for social welfare measures.

Depending upon the degree of control applied by government, coercion will represent a real cost and a political weapon to produce conformity. Coercion takes on a particularly significant aspect where there is universal suffrage. The degree of coercion in a system is measured by the proportion of activities coming under the category of repressive law, as compared with restitutive law. The upper limit to coercion is fixed by the proportion of its cost to net development gains.

On balance, the open, fraternal, mass, congress-type party which derives legitimacy from its large support and provides social mobility through party membership seems to be the most viable development-conscious party one can hope for. Such a party is characteristically socialist in its ideology and pragmatic in its actions. Emphasis upon democracy is provided by stressing economic development as a means to promote both equality of opportunity and, as well, greater shares for all. Contact with the public derives from the radical and populist nature of leaders and followers. Solidarity through party membership brings about social consensus, while burdensome reliance on costly coercive mechanisms characteristic of totalitarian regimes is not necessary.

Much depends upon the institutional framework of government within which the party works. If this provides a nominal opposition,and recruitment is on the basis of universal suffrage, the basis for the development of genuine multi-party democracy is present. A potential opposition serves as a deterrent to extreme coercive mechanisms, thus apportioning a relatively advantageous portion of government revenues to development. Such a nominal opposition works best where factionalism in the mass party is considerable, especially in the parliamentary party. Here, the parliamentary form is of great value. Cabinet government can give the main party an effective working majority, and yet produce limitations on government itself, even where a multi-party situation does not yet exist. Further, such a form provides a relatively autonomous bureaucracy with built-in standards of disinterested service.

Where these conditions prevail: mass party, nominal opposition, development focus, parliamentary form, universal suffrage, and effective civil service, the organizational, coordinational, and communications requirements of the system can be met. Hopefully, successful economic development would push such a political system towards eventual democracy.

SOME SOCIAL AND CULTURAL ASPECTS OF ECONOMIC DEVELOPMENT

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The aim of this paper is to replace the omnibus category of an "undeveloped country or region" with a set of concepts which discriminates among the existing varieties. The diagnostic scheme is based on social and cultural features of low per capita income populations. Three assumptions underlie the rationale of procedure: [1]

1. Long stagnant or slow-growing economies require structural change to develop rapidly, and structural change is a form of social and cultural transformation.

2. Undeveloped regions differ in their susceptibility and resistance to the process of social transformation from a state of relatively slow growth to a state of self-sustained growth.

3. A specification of social and cultural variables indicates differential strategies for different kinds of undeveloped societies.

To decide which social and cultural aspects of a society are relevant for the diagnosis of its particular condition of poverty requires steering between two poles of analysis. On the one hand is the anthropological empiricism of building up culture areas by the mapping or plotting of discrete cultural traits, complexes, or patterns; on the other is the Ideal typenstellung which divides the world into the polarities of "modern" versus "traditional". Both procedures yield analytically useful classifications. Certainly at one level of analysis, the anthropological contention that social life is some kind of organized whole and that no part of a people's life may be ignored in analysis is relevant for the study of social change. Similarly, the ideal type provides a few clear-cut themes by which the empirical diversity may be ordered and held in the mind, while the significant questions about interdependence of parts may be posed.

I seek to balance between empirical complexity and analytical simplification by developing a notion of the areas of social and cultural life most

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1. I take as given the resource base, the physical environment, and other technical-economic factors. The two sets of data--techno-economic and socio-cultural--of course must always be combined in a single model, if sense is to be made of any case. The matter of relative vs. absolute growth, as well as ways of relating the techno-economic to the socio-cultural, is discussed by C. P. Kindleberger, Process of Economic Development, New York, 1958, Chs. I-III.

intimately related to and strategic for social change in the direction of increased wealth and income. My procedure is to describe a series of cultural patterns and social structures at a level of abstraction which permits their identification in more than one society or one culture. The notion or model I offer is diagnostic, i.e., it is a provision for organizing concepts which can discriminate between existing varieties of underdevelopment, but which is still close enough to reality to encompass a wide variety of data. The cultural and social features of relevance to this scheme are of two kinds: (1) those which current theory indicates are most pertinent and relevant for the understanding of social change, and (2) those commonly taken to be intimately connected with the structure and dynamics of the economic sub-system of a society. I shall use, illustratively, material from Burma and Cambodia, so that a categorization on the basis of the concepts can be inspected.

A relatively voluminous body of literature, both analytic and descriptive, is concerned with the relation of economic development to its antecedent and subsequent cultural change. There are statements that the general nature of the social transformation involved in economic development is contingent upon changes in social structure. These structural shifts are from functionally particular allocation of economic roles, functional diffuseness in carrying out such roles, ascription criteria in the attainment of the roles, to the polar opposite set, i.e., universalistic, specificity, achievement, and collectivity features. Levy has, for example, applied this schema to China and Japan and finds that variations in the development of the two nations are related to these variables.[2] Hoselitz has modified Levy's ideas and generalized about the process of economic growth in terms of these aspects of social structure.[3] But such a schema will not perform the task set in this paper, for as Hagen notes, shifts in the "pattern variables" are never specified in amount or degree and perhaps cannot be empirically stipulated.[4]

If we move from the most general statements, as exemplified above and manifested in various other general theories,[5] to the literature which takes a more empirical bent by listing factors of society and culture thought to be related to economic development, we find no systematic or consistent interpretation

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2. Marion J. Levy, Jr., "Some Sources of the Vulnerability of the Structures of Relatively Non-Industrialized Societies to Those of Highly Industrialized Societies", in Bert F. Hoselitz, ed., The Progress of Underdeveloped Areas, Chicago, 1952, pp. 113-125; and "Contrasting Factors in the Modernization of China and Japan", in Simon Kuznets, W. E. Moore, and J. J. Spengler, eds., Economic Growth: Brazil, India, Japan, Durham, N.C., 1956, pp. 496-536.

3. Bert F. Hoselitz, "Social Structure and Economic Growth", Economia Internazionale, Vol. VI, No. 3 (August 1953), pp. 52-72.

4. Everett E. Hagen, "The Process of Economic Development", Economic Development and Cultural Change, Vol. V, No. 3 (April 1957), pp. 193-215.

5. W. A. Lewis, The Theory of Economic Growth, Homewood, Ill., 1955; and W. W. Rostow, The Process of Economic Growth, New York, 1952.

of the way in which different social and cultural arrangements affect development. Kindleberger makes a careful survey of a good part of the anthropological and sociological literature on the inhibiting or facilitating role in economic development of one or another social feature, but arrives at no determinate system of grading the variables.[6] Another attempt to survey some of the literature treating specific social and cultural factors in economic development is found in Shannon.[7] This work is a reflection of the vast amount of information, partial theory, and speculation which has grown up about the attempts to relate the technical-economic variables in economic growth to the social-cultural aspects of the process.

Drawing on this literature and asserting without further documentation the concensual areas of knowledge about the social and cultural factors involved in economic development, I shall build my intermediate diagnostic scheme.

Economic development is a discontinuous process which, following Rostow, Hoselitz, and others, has been divided into three stages. The central period is a stage of "take-off", the break with the relatively stagnant or slow-growing economic past. Prior to the "take-off" period is a time of building resources and skills, while subsequent to the take-off is a state of self-sustained growth.[8]

It is generally conceded that the "take-off" is led by a particular segment of society, either an elite, as in Japan,[9] or a class blocked in social or economic mobility, as in the rise of the bourgeoisie in Western Europe. The success of the dissident social segment and elitist re-orientation of goals is closely tied to the group's administrative abilities and to their skills in enlisting the energies and sentiments of a good part of the population in a program of development (or, less likely, their ability to distribute or allocate rewards and benefits which will serve as self-evident attractions for new economic activity). If we accept the widely held and frequently repeated generalization that economic development involves some industrialization and some use of new technology, then part of the process is dependent upon the relations of the developing region to the developed countries, in which the technology, industry, and skill for mechanization is to be found and from whom they must, at least initially, borrow heavily.

Taking the above as true, or at least as highly probable, it is possible to consider economic development as a process of social and cultural change. The process of economic development is analytically composed of three linked kinds of social action: (1) the choice to institute changes and to seek greater wealth and income; (2) the bringing together of the means and facilities to

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6. Kindleberger, op. cit., passim.

7. Lyle W. Shannon, Underdeveloped Areas, New York, 1957.

8. W. W. Rostow, "The Take-Off into Self-Sustained Growth", Economic Journal, Vol. LXVI, No. 261 (March 1956), pp. 25-48; and Bert F. Hoselitz, "Noneconomic Factors in Economic Development", American Economic Review, Vol. XLVII, No. 2 (May 1957), pp. 28-41.

9. W. W. Lockwood, The Economic Development of Japan, Princeton, 1954.

implement the choice; and (3) the organization of social and cultural life so that growth is a built-in feature of the social system. This conceptualization of the process defines the social and cultural features connected with development: what in a people's life is likely to lead to a choice for social change in the direction of development? How are human and non-human resources aggregated or developed? What mode of social integration is possible as an emergent for self-sustained growth?

Since social and cultural change is a function of the alternatives generated by a given social system, and different groups or individuals are differentially situated in the social structure, there exists in any society a variety of realistic impulses to change.[10] The first cultural feature to be considered in terms of a social decision to undertake development is the pattern of stratification. If the wealth, power, and prestige of a society is strongly polarized between two groups with relatively little mobility between them, it appears that social change on the structural level is unlikely and that new economic opportunities will not be a chief concern of the dominant group and hardly even a perception of the subordinate group. There is, of course, the instance of the dominant group of a society becoming the subordinate group in relations between societies, but the proposition still holds that if the width of the gap is great, the perception of new economic opportunity is not likely. To make this concrete, consider Burma.[11] In Burma, the elite is based in urban locales and characterized by an incipient class system on Western lines. This group is dominant over a rural peasantry of some 16 millions. But there are channels of social mobility between classes in the cities, and from countryside to town. Educational institutions, both religious and secular, offer means of moving up the hierarchy, and there exists a fairly defined mode of social mobility. Burma, then, is a society with some social mobility, incomplete polarization of wealth, power, and prestige, and therefore has the social environment to induce some group to seek social and cultural change. Cambodia,[12] as another example from the same area, exhibits a pattern of stratification like Burma's, but with the added complication of an inherited nobility, in some conflict with the urban segments seeking development. Burma's path, on structural grounds, should be easier than Cambodia's, though the resistance to change in Cambodia is not likely to be extreme.

Apart from the gradation of stratification, though intertwined with it, is the system of social values which justify, explain, and define social position and the means of attaining it. Value systems are hierarchies of related propositions, tied directly to, but not determined by, the experiential world of the members of a society. Value hierarchies change over time in the relative importance of given values and in the emergence of new values and the loss or modification of old ones. The repetitiveness over time of patterns of social action is in part a

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10. Manning Nash, "The Multiple Society in Economic Development: Mexico and Guatemala", American Anthropologist, Vol. LIX, No. 5 (October 1957), pp. 825-833.

11. The information on Burma is taken from Frank N. Trager et al., Burma, New Haven, 1956, 3 vols.

12. The material on Cambodia comes from David J. Steinberg, Cambodia: Its People, Its Society, Its Culture (Country Survey Series), New Haven, 1957.

condition for the stability of the value aspect of the social system. Since both Burma and Cambodia have been under foreign domination and both have recently won independence, we may expect, and in fact find, that given this value hierarchy, the elite is able to emphasize goals of economic development and to incorporate new aspirations. The indices of values conducive to development (here combined with the stratification aspect) are these:

1. Conflicting religious systems, philosophies, and world views in a society indicate the malleability of the value complex and the fact that experience may be variably determined.

2. If the prevailing distribution of wealth, power, and prestige is in some contradiction to the value pattern, then social change and new economic patterns are likely to find sanction among a sizeable segment.

Both Burma and Cambodia are Theravada Buddhist countries, and the overwhelming majority of the population is Buddhist. Buddhism's other-worldliness is not in conflict with success in this world, and the twelve-fold path has many roads which may lead to development. In addition to the religious ideology is the presence of Western beliefs in material progress, combined with socialist and nationalist ideologies resulting from the wars for independence. In Burma, there is a social group in the cities aiming to bring about an economically abundant "welfare state". In Cambodia, too, there exists the range of values which would permit accumulation of wealth. A French-trained civil service and middle class aspires to greater income and more industry. In both countries, then, there are "spearhead" groups for economic development. It must be remembered that the "spearhead" group confronts or is in relation to social segments only partially sharing its values or viewing the desirability of social change from the same perspective. Therefore, a further stipulation on the nature of social and normative cleavage is necessary to assess the potential for change and economic growth. A social segment whose conditions of mobility involve others in the society rising in the social scale (either by recruitment, as in the European experience, or by abolition of inherited obstacles to mobility, as India is doing, in part) stands a better chance of perceiving and acting upon new economic opportunity simply because the social risk is less. In this connection, a nationalist ideology, or drives to nationalist integration and incorporation of diverse cultural traditions, provides a potent impulse toward change and development as a course of action; however, it may inhibit the successful organization of growth.

In Burma, the elite group interested in development is in a position to symbolize the aspirations of the whole nation. The organization of the elite group, with its close ties between secular and religious offices, effectively communicates the nationalist, development ideology to the rural peasantry. Buddhism is the vehicle of symbolic identification between the mass of peasants and the development-oriented urban elite. In Cambodia, the elite group is less well organized, and the effective development and transmission of development ideologies is less.

In forging a national consciousness oriented toward development goals, Burma appears slightly more advanced than Cambodia. The economically powerful Chinese minorities are more closely integrated into the economic and administrative structure of Burma than they are in Cambodia. Efforts are being made (in the directions of expulsion and xenophobia) in Cambodia to lessen the

dependence of the rural peasantry on the Chinese commercial segment, but so far, the native elite is not well enough organized, socially or ideologically, to modify the structure greatly. The social and cultural pluralism of Cambodian society is greater than that of Burman society, and the national identification of Cambodians is apparently less than in Burma. Consequently, the spatial spread of development drives is more restricted in Cambodia, as is the extent of the market.

It must be repeated that no particular cluster of stratification or value patterns is, per se, inhibiting to social change or economic development--all societies change over time, and most social changes have repercussions in the levels of living. What is here maintained is that societies need differing magnitudes of economic opportunity and social rewards before some members are willing or able to emphasize an aspect of their value system leading to development. Burma has a slight edge over Cambodia, though both societies would fall in the same general class.

Given the social decision to undertake social change and development, how can the segment which is the leading group get sufficient means to significantly alter the level of living? This is usually phrased as the problem of capital formation in underdeveloped areas. There are really three problems subsumed in the notion of capital formation: (1) amount of savings, (2) form of savings, and (3) channelling savings into productive investments. The amount of savings is firstly a function of the absolute level of wealth of a society, and secondly of the values and institutions of a culture in relation to patterns of consumption, time perspective, and agencies of accumulation. A poor country produces relatively little which is available for uses other than direct personal consumption: its time perspective of investment is likely to be short and the agencies of aggregation rudimentary. Small peasant farmers, if they make up the bulk of the economically active population, as they do in Burma and Cambodia, do not as individual family or economic units have a large enough level of wealth to permit significant savings. To the extent that a farming family is heavily weighted on the subsistence side of production, as against the exchange side, its savings, whatever the level, do not come in the form which is useful or available for reinvestment in technical progress.

Given the size, number, and kind of economic units operating in Burma and Cambodia, we must weight farm families on a subsistence-exchange ratio.[13] Non-farm economic units must also be weighted by the attractions for them in investment in productive channels.

It is plain that a great deal of saving does in fact go on in any society of national size. But the problem is that savings come in such relatively small doses that they do not usually provide the basis for important reinvestment which would significantly alter the share of the national product reinvested.

The desire to save--the so-called ethic of abstemious living, or puritanical expenditure pattern--is part of a society's value system. No group in the

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13. But see the ingenious use of such an index for a Nigerian community by Michael G. Smith, The Economy of Hausa Communities of Zaria (Colonial Research Studies No. 16), London, 1955, passim, but especially pp. 139 ff.

recorded cultures of man saves for the act of saving. Saving is a function of the ends-in-view of the receivers of income. In both Burma and Cambodia, farm families are anchored in small communities. In these rural communities, income is subjected to communal claims in the form of forced loans, feasts, and status maintenance activities. These claims on production are more important, I believe, in reducing the savings available for non-consumption investment, than is the mis-called "extended family". The emphasis on the dilution of incentive to save because individuals are involved in wider networks of kinsmen than they are in our society is a product of armchair anthropology, rather than the result of research. For example, Belshaw indicates that extended families may be important in the initial aggregation of capital and also in the channelling of investment.[14] To put it as generally as possible, in view of the fragmentary empirical data, much of the rural farming section of Burma and Cambodia does not now accumulate capital because: (1) low absolute level of production; and consequently (2) low savings; and those savings made are (3) claimed by communal expenditure or status obligations; (4) so that capital form is of a kind not easily alienated from the economic unit, or oriented toward technical and economic progress.

In the non-rural, non-farming sectors, rates of saving are higher, but the size of the economic units makes the absolute level of any given firm rather small, thereby inhibiting its ability to bear risk or to promote long-range investment. The agencies for accumulating capital--the joint stock company, the limited liability form of ownership, the stock and securities market, the central banking system--are not well developed or widespread in either Burma or Cambodia. Significant lumps of capital are hard to come by, relative to the amount of savings which the gross national product might indicate. The more developed are the institutions for aggregating large amounts of capital, the closer is a society to the take-off period. Burma's development corporation, part of the national administrative apparatus, is more highly organized than Cambodia's and serves as a more efficient agency of planning and capital aggregation.

Obviously, the government of underdeveloped countries provides one of the chief agencies for the aggregation of capital and for the provision of the legal basis for the emergence of forms of organization capable of forming capital. The government has recourse to development corporations, banking systems, monetary control, taxation, and confiscation.

The abilities of governments to carry out any of the possible measures open to them depends, in large part, on the degree and kind of national integration. Therefore, the extent to which the territory under consideration is in fact welded into a society by a set of conventional understandings is crucial. The greater the social cleavages in terms of cultural definitions as to the ends to be sought, the more difficult it is for a government to perform the aggregating functions of capital formation, and the more difficult it is for a governing group to provide the legal and institutional basis for the private formation of capital.

In societies like Burma and Cambodia, the government has the problem of initiating and sustaining drives to national integration. The task is one of

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14. C. S. Belshaw, In Search of Wealth, Memoir No. 80 of the American Anthropologist, Menasha, Wis., 1955.

creating a national culture and forming a national society from a plurality of cultural traditions and semi-locally organized societies. The large Chinese and Indian minorities, the rural peasants, the hill tribes, and the urban elites occupy the same territory, but they do not form yet a single society. Burma is a better integrated national entity than is Cambodia, but still the ability to levy on the production of the peasantry is not well developed. Consequently, the government invests money in activities and organizations only tangentially related to economic development, but symbolically or politically important in developing a national consciousness. Investment by government in the means of coercion--armies, police, bureaucracies--in order to maintain power over cultural and social diversity, or to carry out programs of taxation or confiscation, is often a severe drain on limited resources. The closer ties in Burma between the religious agencies and development agencies, as compared to Cambodia, indicates greater possibilities for making palatable to the run of Burmans the sacrifices in immediate consumption for development ends.

The rate of savings, then, the form of savings, and whether or not it goes into productive channels is intimately tied to the social and cultural aspects of a nation, but there is no easy rule for the ex ante identification of the institutional locus for promoting or inhibiting savings, for their form, and for their allocation, to ends conducive to further growth. But to date, the urban elite of Burma appears to be in a better position vis-a-vis their cultural diversity than is that of Cambodia.

The third category of social action in economic development is the organization of economic activity for self-sustained growth. The relevant dimensions are of two kinds: (1) the development of persons and organizations who will either invent or adapt new technology and new economic organization; and (2) the spread of the market and the increase of scale of productive enterprise. In these two categories are a host of variables--from schools, books, research institutes, literacy, public health, managerial skills, and labor force commitment; to the provision of roads, uniform currency, weights, and measures, and the reduction of the use of fraud and coercion in business transactions.

The motivational order of self-sustained economic growth is not stressed here, since it is assumed that if levels of living are raised, there will be commitment to the higher level. What the organization of economic development means is the creation of the environment in which continually improved inputs, human and non-human, are applied to the productive process as a matter of course. The social structures and cultural patterns which foster this are extremely variable theoretically and probably empirically exhibit a wide range.

In Burma, there exists the tradition of learning, of literacy, and of scholarship. The government is stressing literacy oriented toward some of the literature of daily life and work, rather than the esoteric and religious materials which formerly made up the content of Burmese literacy. In Cambodia, the literacy rate is less and the tradition not as widespread. Emphasis on secular learning is something almost exclusively tied to the urban areas.

The government organization involved in providing this social organization of development must prevent the rise of internal monopoly which restricts the market size and creates a larger zone of technological indifference. The royal-client organization of the Cambodian government seems a less promising

instrument for these tasks than does the rudimentary parliamentary system of Burma. The danger in both countries is one of bureaucratic commitment to the maintenance of non-economic but state-run or sponsored industry.

The argument has now come full circle--from the conditions under which development is likely to become a goal, to the circumstances which make it self-sustaining. I should like to restate the argument and provide a graphic profile of Burma and Cambodia. Several caveats must be entered, lest serious misunderstanding ensue. There is small probability of a theory of economic development and cultural change which can be stated at a level relevant for action. Given the nature of social causation as "cumulative", the particular constellation of social and cultural features in a given society is the relevant dimension of analysis, rather than the general order of social integration. This scheme is a way of picking from the welter of social facts those most intimately associated with economic development and cultural change. It offers a first approximation to ordering social and cultural features in a manner consistent with interpreting the major sources of stability and lability in a society.

To assess a society's potential for economic development in terms of meaningful alternatives, these are the diagnostic social and cultural features:

I. The Pattern of Social Stratification

A. The more extreme the polarization of wealth, power, and prestige between classes or social segments, the less likely is new economic opportunity to be perceived or acted upon.

B. The more restricted the channels of social mobility between the top group and the segment just under it, the greater the possibility of the latter group seeking new means of mobility.

C. The greater the gap between the legitimate sanctioned means of attaining wealth and the actual ways in which current holders of wealth have attained it, the greater likelihood of accepting structural change.

D. The more frequent the recruitment of lower class members into upper class strata by merit or achievement, the larger the opportunity for seeking development.

II. The Value System

A. The more there are competing ideologies and philosophies, the easier it is to win commitment to development.

B. The greater the stress on nationalism, the more probable it is that development can be made one of the national goals.

C. The greater the value agreement between different segments of the elite, the easier it is to transmit development values.

D. The more varied the definition of the same general complex, from social segment to social segment, the less the social risk for an

elite group in emphasizing the manipulative or material gain aspects of the value complex conducive to development.

III. The Economic Sub-System

A. The more economic units are weighted on the subsistence side of production and the more they are anchored in local, communal organizations, the more difficult it is for them to save or for savings to take a form useful for rapid development.

B. The lower the level of absolute wealth, the shorter the time perspective of investment, the more difficult it is to secure capital for long-run projects.

C. The more developed and varied the agencies of accumulation (joint stock companies, securities markets, central bank, etc.), the more likely that significant amounts of capital can be productively channelled.

D. The less the market or segments of it are monopolized, the greater the possibility of new investment.

E. The more the holders of wealth are actually involved in the business of production, the more likely they are to respond to new economic opportunities.

IV. The Political Sub-System

A. The greater the sovereignty of the government over its territory without the use of coercive instruments, the easier is a program of development.

B. The more organized the group holding political power, the easier it is to embark on development programs.

C. The greater the allegiance of persons in the territory to ideas of nation and central government, the more likely that development can be undertaken.

D. The greater the width of recruitment into political office, the more likely that development can be organized.

E. The less the ideological cleavage in the elite, the greater the possibility of bureaucratic or non-economic goals (too great a cleavage results in civil war and, of course, no development).

These rubrics are offered as a preliminary way of gauging the social and cultural aspects relevant to economic development and cultural change. Charting or interpreting a given social system according to this scheme is a subtle, unstandardized, and as yet not very reliable operation. The difficulty of stating the range of alternatives to action in a social system is enormous: and this difficulty is increased, rather than lessened, because social scientists cannot assess alternatives without getting into complex action and application programs

which involve value and political choices extraneous to research as it is now conceived. Lastly, the notion of "economic development" is not a self-justifying one, and the various social and cultural costs people are willing to pay for material improvement is an open question, since no one is able to specify what sacrifices are involved in one or another course.

The accompanying diagrams are a first approximation to making a cultural and social profile of a given society in terms of the variables enumerated above.[15] Burma and Cambodia, according to the profile, belong to the same "species" as far as economic development potential is concerned. Nonetheless, for reasons stated in the text, Burma's path appears to be less precarious than Cambodia's.

Whether or not this categorization is more than a function of theory and is worthy of the further expansion and elaboration it so obviously requires can only be resolved by empirical work, oriented to the end of examining and specifying alternatives generated by different societies and cultures. Such a research task is on the agenda of anthropology, and perhaps of history.

APPENDIX

Across the top of the diagrams, it is shown how the elites are divided into two organizations--the political and religious. Connected to these are their corresponding values. Emanating from the elite's structural blocks are the channels of mobility, which depict the hierarchical ladder connecting these sectors to the base of the population--the peasantry.

(It should be noted that there is a wide difference between the social structure of the rural peasant communities and that of the urban populations. In both countries, the social organization of the rural villages is primarily based upon traditional age-sex and ascriptive statuses dependent upon kinship and residential criteria, while in the cities an incipient class structure is found which is similar to that found in Western societies. In both the rural and urban settings, however, educational achievement plays probably the most important role as the vehicle for mobility--the rural people beginning in the religious educational institutions and the urban workers in the secular institutions. Criteria of wealth are more important for urban-setting mobility. Thus, for simplicity, the diagrams depict the educational aspect of mobility into the political and religious spheres wherein reside the society's definitions of power and prestige.)

The integration into the social structure of the economically important minority populations in both nations is shown by their direct connections (or cleavages) with other segments and/or mobility among segments. Solid arrows

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15. See next page.

Diagram 1. Burma

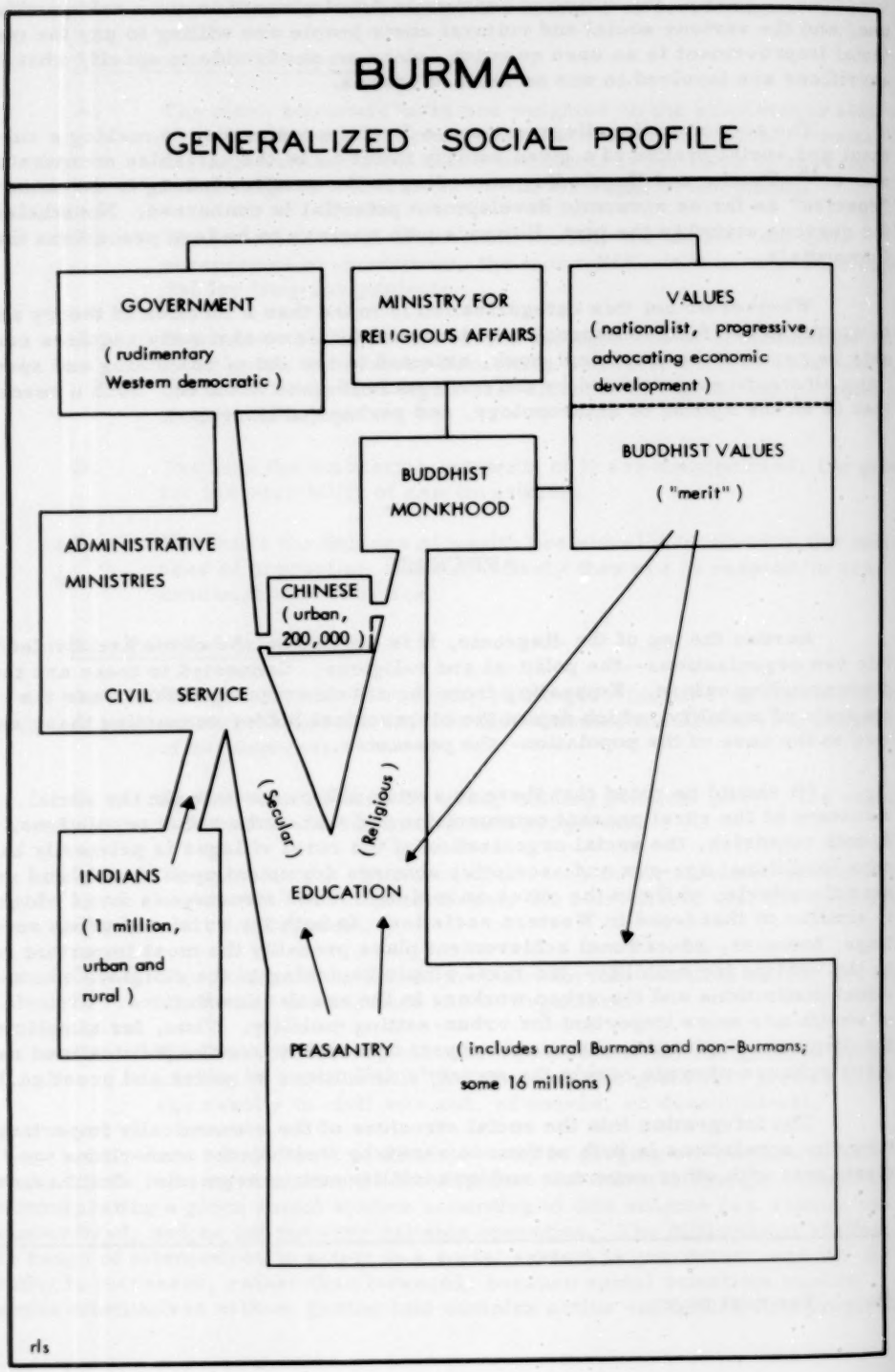
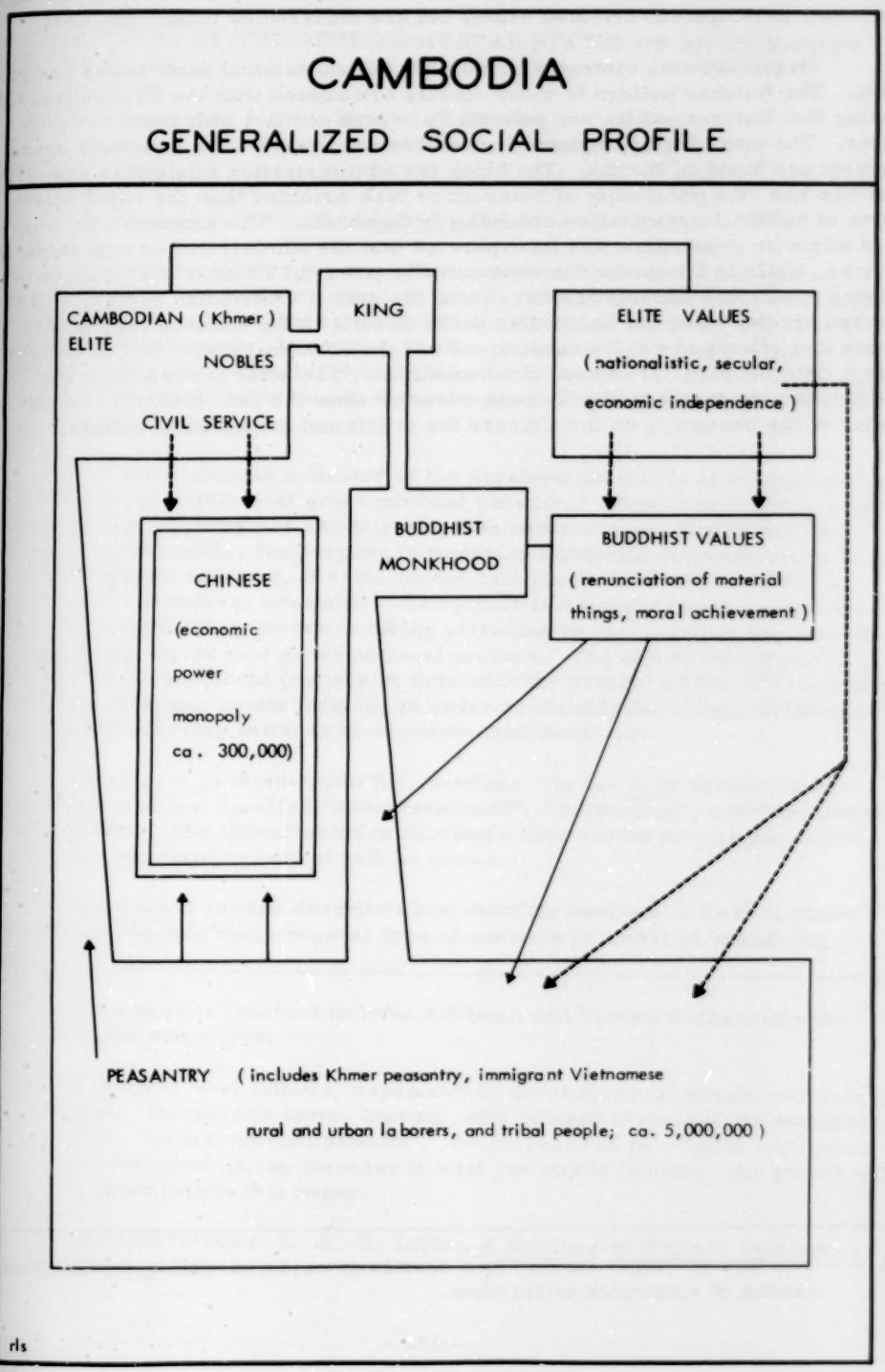


Diagram 2. Cambodia



from the value blocks[16] depict their effective transmission to the peasantry, and broken arrows from the value blocks show that attempts are made to instill the more development-oriented values but are hindered by traditional ones.

Organizational contrasts in mobility via educational institutions are evident. The Burman pattern is more closely articulated than the Cambodian, indicating that Burman values are potentially in less conflict with rapid development. The more highly organized governmental agencies for economic development are found in Burma. The block for administration ministries and civil service has the possibility of being more task-oriented than the royal-client form of political organization obtaining in Cambodia. The economically important minority populations are incorporated into the administrative apparatus in Burma, while in Cambodia the economically powerful Chinese are isolated by strong social and cultural barriers from the rest of Cambodian society. The broken arrows from the Cambodian political elite to the Chinese signify that concerted efforts are being made to curtail the economic power of the Chinese, but to date the structure is not much modified. The solid arrows from the Cambodian peasantry to the Chinese minority show the real economic dependence of the peasantry on the Chinese for credit and commercial outlets.

16. The idea of "value blocks" is a shorthand way of stressing the dominant canons of a complex world view.

INDICATORS OF THE DEVELOPMENTAL STATUS OF AN ECONOMY*

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Introduction

The subject of this paper, indicators of underdevelopment, poses a significant problem to the economist: how to select from the many observable attributes of an economy those which can be related to the level and pace of economic development. In order to do this, a usable theory of economic development is required. Ideally, this theory should be able to identify those observations which would enable us to discriminate among economies in different stages of development.

The most obvious indicator of the development status of an economy is the level of per capita real gross national product.[1] Even though there is no simple way of equating per capita real gross national product with economic welfare[2] (presumably, the purpose in fostering economic development is to increase economic welfare), it remains the best single indicator of where an economy is. However, economic development is a process in time, and the speed with which this process is taking place can be measured by the rate of change of per capita real gross national product. The aim of this paper is to connect this development process in time with the present status of an economy as measured by per capita income, in order to identify the characteristics associated with varying patterns of developmental behavior.

This paper is divided into four sections. In the first section, three types of economies, labelled "underdeveloped", "developing", and "developed", are identified. The characteristics that their time series of real per capita income are expected to exhibit will be stated.

The second section describes how stability analysis is used in static analysis and argues that a similar type of analysis is useful in examining

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* The author is indebted to Irma Adelman and Harvey Leibenstein for helpful comments.

1. In much of what follows, especially in the theoretical portions of this paper, the generic term, income, will be used instead of the technical term, "gross national product". An increase in per capita real gross national product, an increase in real per capita income, and growth will be synonyms in this paper.

2. This is a theme of E. A. G. Little, A Critique of Welfare Economics, Oxford, 1957, 2d ed.

economic growth. It is conjectured that "being underdeveloped" and "being developed" are stable states, whereas the developing state is unstable.

The third section is the technical heart of the paper.[3] The relations which generate aggregate demand and aggregate supply are derived, and it is shown how their interaction determines actual income. The conditions for self-sustained growth are derived.

In the fourth section, the likelihood that the conditions for self-sustained growth will be satisfied for underdeveloped, developing, and developed economies is examined. In addition, the stability of these states is investigated.

I. Types of Economies

In order to identify indicators of underdevelopment, three types of economies will be distinguished. These types will be referred to as developmental stages or states and are labelled: (1) underdeveloped, (2) developing, and (3) developed economies. The characteristics of the underdeveloped and developed economies are most easily stated, and the developing economies are best considered as being in transition between the underdeveloped and developed states.

From the dynamic perspective adopted here, the most significant difference between an underdeveloped and a developed economy is that a normally functioning underdeveloped economy does not grow, whereas a normally functioning developed economy grows. The dynamic attribute which is going to be used to classify economies is whether or not an increase in real income sets in motion a process which sustains or even accelerates the rate of increase of real income. The technical portion of this paper consists of an examination of the necessary and sufficient conditions for self-sustained growth within the framework of a linear model of the economy. The linear model is based upon the interaction of aggregate demand and aggregate supply. In addition, the stability of the various developmental stages or states will be examined.

In an underdeveloped economy, whenever an increase in real gross national product occurs, either it is not sustained or it is quite rapidly offset by a rise in population. A limiting form of underdevelopment is found in the stagnant economies in which net savings, net investment, and the net change in population are all zero. A particular type of stagnant economy is the underdeveloped economy in which the per capita real gross national product is so low that a large proportion of the population is at or is close to the biological subsistence level. In addition to the subsistence stagnant state, stagnation can occur at per capita incomes higher than the biological subsistence level. This occurs when an economy reverts to the underdeveloped state after a period in which per capita incomes are increasing and population growth does not offset the cumulated increase in real per capita income.

As the normal functioning of an underdeveloped economy does not generate growth, whatever growth occurs must be the result of factors external to the

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3. Proofs of various assertions in Section III and the application of this mechanism to business cycles in developed economies are in a paper of mine, "A Linear Model of Cyclical Growth", which will appear in the Review of Economics and Statistics.

growth-determining relations. These external factors will be called "shocks". Shocks are not necessarily random events; they can be such items as exceedingly favorable weather conditions leading to excellent harvests, the discoveries of new raw material sources or production processes, wars, foreign investments, economic aid, or the impact of international trade and government policies. In particular, these shocks may be the result of conscious policy decisions. Within the framework of this paper, the strategy of economic development planning consists of first identifying the shocks which will result in an increase in per capita income, and then administering such shocks until the cumulative effect of the disturbances transforms the economy from an underdeveloped economy to one in which self-sustained growth occurs.

When a developed economy is functioning normally, it is growing. In these economies, the saving propensity at full employment and the structure of production are such that unless a high rate of investment is taking place, large-scale unemployment occurs. As net investment implies an increase in productive capacity, and as continuation of the investment process depends upon the utilization of existing capital, these economies are functioning normally if and only if gross national product is increasing. We will assume that the rate of growth of productive capacity due to technological change and the investment necessary to maintain full employment are greater than the full employment rate of growth of population; thus an increase in real gross national product results in an increase in per capita real gross national product. [4]

In a developed economy, the saving propensity may be such that the amount of investment required to maintain full employment outpaces the technological changes at the "world's" technological frontier. In this case, full employment can be maintained only by making those investments which yield expected returns lower than had previously been earned. In a private enterprise economy, due to the pervasiveness of uncertainty, there is a positive floor to the expected returns on investment that will induce investment. Hence, in a developed economy, a situation may arise in which full employment savings exceed investment. If this happens, the economy falls away from full employment. However, due to the high-level consumption tendencies in a developed economy, there is a high and usually rising floor to income. Given stability in the financial sector and non-disequilibrating government action, the economy will bounce off the floor and quickly resume its growth. That is, a developed economy may exhibit cyclical rather than steady growth.

Instability in the financial sector, disequilibrating government action, and reversal of the high-level consumption tendencies are shocks to a developed economy which can counter-act its inherent tendencies to grow. Sufficiently large shocks leading to a large fall in income can result in such a large volume of excess productive capacity appearing in a developed economy that the inducement to invest in new capacity becomes very small. In these circumstances, a developed economy can revert to an underdeveloped economy, in the sense that a large shock increasing income must occur before increasing per capita income once

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4. In this paper, feedbacks from changes in per capita income to changes in population will not be investigated. Harvey Leibenstein discusses this problem in Economic Backwardness and Economic Growth, New York, 1957.

again becomes the normal state of the economy. The great depression of the 1930's can be interpreted as such a reversion to the underdeveloped, no growth, or stagnant state by high income countries.[5]

The relation between an economy's productive technique and the world's technological frontier is a significant difference between an underdeveloped and a developed economy. Any significant change in production techniques in a developed economy is due to either a net addition to the world's knowledge or a significant change in factor costs. In an underdeveloped economy, a significant change in productive techniques can occur as a result of adopting techniques known and used in other, more developed economies.[6] As a result, the possibility exists that an underdeveloped economy can move from well behind the technological frontier up to the technological frontier. As such a large jump in technology can lead to a rapid increase in productive capacity, the possible rate of increase of income for an underdeveloped economy is greater than for a developed economy. Economies which are engaged in shifting technology and hence are enjoying the benefits of technological discontinuities are the developing economies. As developing economies are capable of growing faster than the developed economies, developing economies can be catching up with the developed economies.

The developing stage can be broken down into two sub-stages. In the first sub-stage, the economy is emerging from being underdeveloped, and growth is not self-sustained. Whatever increase in real income occurs is due to shocks. After a rise in income due to such shocks, income either remains at the new higher level or reverts to the previous level. It may take a number of sizeable shocks to put the economy into a condition where factors inherent in the nature of the economic process sustain further growth. How severe these shocks have to be and how long they have to be sustained will of course vary from economy to economy.

In the second sub-stage, the economy will by its internal processes sustain further growth. In this sub-stage, the developing economy is capable of converging on the developed state by sustaining a higher rate of growth than the developed states sustain. Even as a developed economy can be shocked into the undeveloped state, so can a developing economy. It is to be expected that the size of the shock that will cause a developing economy to become an undeveloped economy is smaller than is needed to cause a developed economy to revert to the undeveloped stage. However, the momentum of the rapid growth that developing economies are capable of may be sufficient to overcome shocks that would transform the more slowly growing developed economies into stagnant states. Hence, during great world depressions, when developed economies stagnate, some economies that had been developing very rapidly still continue to grow.

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5. This framework makes the "great depression" something different from an ordinary business cycle. This is a theme of J. S. Duesenberry, Business Cycles and Economic Growth, New York, 1958.

6. The existence of a favorable but unexploited natural resource base is analogous to the existence of a gap between the existing and the frontier technology. In terminology to be introduced later, the productive efficiency of investment is higher than it would be if the natural resource base did not exist.

Independently of the shocks to which they are subject, at least two significant obstacles to the continuation of high rates of growth by self-sustained developing economies exist. One is the effect of the knowledge of the existence of higher living standards upon consumption, and hence saving habits. The second is the combined effect of the piecemeal disappearance of the technological frontier and the existence of capital intensive sectors which are relatively unchanging technically.

The consumption effect, often labelled a Duesenberry or a demonstration effect, operates to cut down the ratio of savings to income in the developing countries.[7] The argument is that as per capita real income rises in the developing economies, emulation of the consumption standards of the richer countries is more powerful in its effect upon savings than the rapid increase in per capita income. Hence, the ratio of savings to income will be lower in the developing than in the developed economy, even though the rate of growth of income is higher in the developing economy.

Counteracting the Duesenberry effect are the effects of wealth and of capital imports. The developed economies are characterized not only by higher per capita income; they are also characterized by higher per capita wealth. An hypothesis which has been put forth to explain the essentially constant savings ratio in developed economies as per capita income increases in time, is that the higher per capita wealth associated with the higher per capita income operates to decrease the savings ratio.[8] Hence, if developing countries exhibit a lower savings ratio than the developed countries, the demonstration effect dominates, whereas if they exhibit a higher savings ratio, the wealth effect dominates in determining savings behavior.

Capital imports supplement domestic saving, and therefore they tend to offset the Duesenberry effect for developing economies. In a free enterprise context, such capital imports require servicing. As at least some of the increment of output resulting from the investment does not accrue to the capital-importing economy, the efficiency of imported capital in raising the per capita income of the capital-importing economy is lower than the efficiency of investment financed by domestic savings. However, due to jumps in productive techniques and the existence of easily exploitable natural resources, the productive efficiency of investing abroad may be much greater than the productive efficiency of investing at home for the capital-exporting country. Whether foreign private investment helps sustain a high rate of growth of income for a developing economy depends upon how the advantages of being backward are shared by the two countries.

The other obstacle to a continuously rapid rate of growth of a developing economy is two-pronged. One prong is the existence of sectors of the economy

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7. J. S. Duesenberry, Income, Saving and the Theory of Consumer Behavior, Cambridge, Mass., 1949.

8. A. C. Pigou, "The Classical Stationary State", Economic Journal, Vol. LIII (1943), pp. 343-351. J. Tobin, "Asset Holdings and Spending Decisions", Papers and Proceedings, American Economic Review, Vol. XLII (1952), pp. 109-123.

which are capital intensive (in the sense that a great deal of capital is needed per unit of output) and where outputs are complementary, either in production or in consumption, with the products of other sectors. The other prong of the production obstacle is that, as an economy develops, the technological frontier is achieved in more and more outputs, so that the possibility of rapid growth through technological jumps disappears.

The existence of capital intensive sectors, complementary to the other sectors, implies that some investment is not very efficient in achieving rapid increases in productive capacity. This in itself reduces the rate of growth in income. An economy is capable of rapid growth if it possesses either excess capacity in the capital intensive sectors or the ability to increase the capacity of these sectors relatively cheaply. A period of rapid growth will be characterized by both jumps in technology and the lack of capital intensity in the investments undertaken. As income grows, the capital intensive sectors can constitute a bottleneck of increasing severity to further rapid growth, so that growth either stops or slows down as investment in these sectors takes place. For developing economies, periods with low rates of growth can be expected to alternate with periods of high rates of growth.

A developing economy does not move up to the technological frontier everywhere at once. Rather, it catches up industry by industry, plant by plant. As rapid growth takes place, the number of possible technological jumps that an economy can take advantage of decreases. To the extent that complementarity among outputs exists, each time an intra-technological frontier industry is expanded, some industries that have reached the technological frontier at an earlier date have to expand. The expansion of these frontier industries can only take advantage of the "marginal" technological change. This tends to cut down the rate of growth of developing economies. If the ratio of savings to income is smaller in the developing than in the developed economy, the rate of growth in the developing economy may fall below that of the developed economy.

If the amount of investment induced by the decreased rate of change in income of a developing economy, due to the increase in the capital intensity of investment and the prior absorption of the more productive technological jumps, is smaller than the amount of savings generated by the existing income level, income will fall. A lapse from full employment and its associated vigorous growth on the part of a developing economy can result in a reversion to the underdeveloped state, even though the per capita income may remain at a higher level than it was prior to the developing period.

II. Stable and Unstable States

In the next section, a model of economic growth which depends upon the interaction of aggregate demand and aggregate supply will be constructed. A formal problem is how to characterize the different developmental states. In static economic analysis, it has been found enlightening to examine the stability properties of the models,[9] and an analogous analysis can be applied to dynamic models.

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9. P. A. Samuelson, Foundations of Economic Analysis, Cambridge, Mass., 1947, pp. 254-346.

In stability analysis, it is first assumed that an economic model determines a set of equilibrium values of the variables, e.g., values of the variables that simultaneously satisfy all of the relations of the model. The next step is to assume a shock so that the actual values of the variables are displaced from their equilibrium values. The problem investigated is whether the system will in time return to the original equilibrium values, whether a new set of equilibrium values will be reached, or whether a continuing movement, either monotonic or cyclical, will be initiated. To carry out this analysis, it is necessary to assume that the deviation of the variables from their original equilibrium values trigger some process in time of the variables. The specifications of this time process are additional assumptions of the stability analysis. Once the properties of this time process are specified, the nature of the relations in the equilibrium model that yield stable and unstable solutions are derived. Knowledge is gained from stability analysis of the type of static relations that yield stable equilibrium solutions.

A system may have more than one equilibrium set of values. If a system has a number of equilibria, they can be ordered so that they are alternatively stable and unstable. If the system is at a stable equilibrium and there is a slight disturbance, then no large changes are induced, and the system will in time return to its original equilibrium. On the other hand, if the system is at an unstable equilibrium, a slight disturbance will set off large changes, and the system will either move toward a new, this time stable, equilibrium or explode--e.g., move without end. In a stable system, small disturbances do not set off large reactions, whereas in an unstable system, small disturbances set off large reactions. The reverse side of this disturbance-reaction coin is that it takes a large disturbance (shock) to change a multiple-equilibrium model from one to another stable equilibrium. An unstable equilibrium can be interpreted as the boundary between disturbances which result in a return to the original stable equilibrium and those which result in a movement to a new stable equilibrium value. The region around any unstable equilibrium is divided into sub-regions, so that a shock into each of these sub-regions results in a movement to different equilibrium points.

In growth analysis, we are not interested in equilibrium values and their stability. The essence of growth is that in time the value of the variables for the economy change. The growth or development pattern of an economy is a time process. What we are interested in is the stability of the time process that characterizes an economy.

The existence of three types of economies has been posited. These economies are characterized by the time series of per capita real gross national product they generate. These are: (1) the underdeveloped economies, where in time the per capita real gross national product does not change; (2) the developing economies, where the per capita real gross national product may be increasing very rapidly; and (3) the developed economies, where per capita real gross national product changes at a sustained but moderate rate. The conjecture about the stability of these states being proposed is that the underdeveloped and developed states are stable processes, whereas the developing process is unstable.

This implies that in an underdeveloped economy a slight deviation of the rate of change of per capita income from its equilibrium value (zero) will set up a process in time that will return the rate of change of income to the

equilibrium value, although it may be at a higher per capita income. Similarly, in a developed economy there is an equilibrium rate of change of per capita income, and any deviation from this equilibrium will set up processes that will in time return the economy to its equilibrium rate of growth. Note that the equilibrium rate of growth of income can remain constant, even though per capita income is increasing.[10]

The developing state is unstable in two senses. In the first sense, continued movement away from an "underdeveloped" equilibrium position can only take place as a result of repeated shocks. If the shocks are removed, the system reverts to the underdeveloped state, unless the sum of the shocks is large enough to shift the economy to the region where it gravitates toward the developed state. The need for an increase in per capita income larger than some minimum values before self-sustained growth will occur is, of course, a formalization of the minimum critical effort thesis.[11] The second sense in which the developing state is unstable is that once self-sustained growth is set off, the system will eventually tend to grow faster than the developed economies. This catching up comes to an end either when the developing economy does catch up or when it exhausts the advantages which made the rapid growth possible.

III. A Formal Model of Economic Development

The purpose of a formal model is to clearly set out the variables, relations among the variables, and the parameters that it is conjectured are relevant to the problem at hand. Once formulated, such a model is useful as it predicts the effect upon the variables of changes in the relations and in the parameters; hence, it serves as a framework for the analysis of specific problems. The model used here is a dynamic aggregate model which generates a time series of income.[12] The rate of change of income depends upon the parameters of the model and the initial conditions. In the next section, the relation of the parameters of the model to the developmental states will be examined.

A basic assumption underlying this model is that the intertemporal income-generating process is essentially the same in all free economies, regardless of their developmental stage. The observed real and important differences in the time series of income of economies in different developmental stages are due to differences in the values of the parameters.

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10. See Leibenstein, op. cit., for a discussion of quasi-stability. The text asserts that the underdeveloped and developed states are quasi-stable, in that their essential properties can exist at varying levels of real per capita income.

11. Ibid., pp. 94-106.

12. As mentioned earlier, income in this paper has to be interpreted as real per capita income.

The Ingredients of the Formal Model

The model is based upon two well-known ingredients. The first is the linear accelerator-multiplier model that has been applied to the explanation of business cycles.[13] This ingredient determines the aggregate demand. The second is the capital coefficient-savings coefficient model of economic growth that has been used to explain growth independently of the development stage of the economy.[14] The growth model determines aggregate supply. The interaction of aggregate demand, determined by the accelerator-multiplier process, and aggregate supply, determined by the growth model, will generate the time series of actual income.

The linear accelerator-multiplier model has been used to analyze business cycles in advanced economies. In considering less than full employment situations, it is natural to abstract from the determinants of aggregate supply--for with resources unemployed, aggregate supply is infinitely elastic. When users of this model wish to consider the behavior of the economy at full employment, constraints are introduced so that actual income may deviate from income as determined by the accelerator-multiplier model. Hence, the accelerator-multiplier model determines aggregate demand.

There are two parameters of this model. The consumption coefficient, α, relates actual consumption to the previous period. As it is assumed that actual consumption equals planned consumption, $(1 - \alpha)$, the marginal propensity to save, generates ex ante saving. The investment coefficient, β, relates the amount of investment planned for the next period to the achieved rate of change of income. β is not to be interpreted as a technological or production function characteristic; it is a "social", a "behavioral" coefficient that determines induced investment. Its value depends not only upon the return that can be earned from investment, but also the financing and entrepreneurial conditions. In applying the formal model to problems of economic development, the differences between economies in the social determinants of the "willingness" to invest may be more significant than differences in the expected profitability of investment.

The attractiveness of the linear accelerator-multiplier model for the analysis of business cycles is due to its being a simple formulation capable of generating a rich variety of alternative types of time series. Ignoring those "border" types of time series which depend upon specific values of the parameters, it is capable of generating time series which are (1) monotonic damped, (2) cyclical damped, (3) cyclical explosive, and (4) monotonic explosive. The

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13. P. A. Samuelson, "Interaction between the Multiplier Analysis and the Principle of Acceleration", Review of Economics and Statistics, Vol. XXI (May 1939), pp. 265-268. J. R. Hicks, A Contribution to the Theory of the Trade Cycle, Oxford, 1950.

14. R. F. Harrod, Towards a Dynamic Economics, London, 1948. E. D. Domar, "Capital Expansion, Rate of Growth and Employment", Econometrica, Vol. 14 (April 1946), pp. 137-147; and also "Expansion and Employment", American Economic Review, Vol. XXXVII (March 1947), pp. 35-55.

type of time series it tends to generate depends upon the values of the consumption and induced investment coefficients. As the process of economic development results in a monotonic increasing time series (ignoring short-run deviations from growth), those values of the consumption and investment coefficients which tend to generate a monotonically explosive time series are relevant to the problem at hand. However, as a monotonically explosive time series generated by the accelerator-multiplier process will in time yield rates of growth of income greater than any observed rates of growth, it is necessary to constrain this process. This constraint will be supplied by productive capacity which, it will be shown, cannot grow as fast as aggregate demand.

The maximum value of aggregate supply is given by the productive capacity of the economy. The productive capacity of the economy depends upon the size and character of the various inputs, the capital stock, the labor force, and the natural resource base. The formal model which generates the time series of productive capacity will relate the productive capacity of the economy to the amount of past investment and the productive efficiency of this investment. The various determinants of productive capacity other than the size of the capital stock will be interpreted as determining the productive efficiency of such investment.

The capital coefficient-savings coefficient growth model has two parameters. The savings parameter, $(1 - \bar{\alpha})$, relates actual savings to actual income, and hence is a coefficient of realized or ex post saving.[15] As ex post saving necessarily equals ex post investment, $(1 - \bar{\alpha})$ is the percentage of income actually invested. The second parameter, the investment coefficient, $\bar{\beta}$, is the capital-output ratio. Although it is mainly determined by the technical productivity of increment to capital, $\bar{\beta}$ is affected by changes in the productive efficiency of the factors that cooperate with capital in production, especially by changes in the efficiency or characteristics of the labor force. In applying this model, $\bar{\beta}$ has to be interpreted as the realized changes in productive capacity associated with, but not necessarily entirely due to, the investment actually put in place during any period.

In addition to the determinants of aggregate demand and aggregate supply, the model includes a reconciliation process. Demand and supply are not identically equal; they are equated by an economic process. The process operates so that when ex ante aggregate demand is less than aggregate supply, actual income will equal the ex ante aggregate demand. In this case, there will be excess capacity. When ex ante demand is equal to or greater than aggregate supply, actual income equals aggregate supply. In this classical world, it may be necessary for actual consumption or investment to deviate from planned consumption. It is assumed that the reconciliation results in actual investment falling below planned investment.

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15. For the distinction between ex ante and ex post concepts, see B. Ohlin, "Some Notes on the Stockholm Theory of Savings and Investment", Economic Journal, Vol. XLVIII (1937), pp. 53-99; 221-240.

The Determination of Aggregate Demand

The accelerator-multiplier model is based upon two lagged relations.[16] First, consumption during the t^{th} period depends upon actual income during the $t - 1^{st}$ period. Symbolically, we have

(1) $C_t = \alpha Y_{t-1}$,

where α is the marginal (in this case, it is also the average) propensity to consume; α is assumed to be greater than zero and equal to or less than 1. Secondly, investment during the t^{th} period depends upon the change in actual income between the $t - 1^{st}$ and the $t - 2^{nd}$ periods. Symbolically, we have

(2) $I_t = \beta(Y_{t-1} - Y_{t-2})$

where β is the coefficient of induced investment (often called the accelerator coefficient); β is assumed to be positive. We also have that for any period income equals consumption plus investment. That is,

(3) $Y_t = C_t + I_t$. Combining equations 1, 2, and 3 yields

(4) $Y_t - (\alpha + \beta)Y_{t-1} + \beta Y_{t-2} = 0$. The solution to equation 4 is

(5) $Y_t(d) = A_1 \mu_1^{\,t} + A_2 \mu_2^{\,t}$.

The symbol $Y_t(d)$ is used to signify that equation 5 generates aggregate demand. We have that aggregate demand depends upon the consumption reaction to actual incomes and the investment reaction to the actual change in income.

Equation 5 will be called the solution equation to the accelerator-multiplier model. In this solution equation, A_1 and A_2 depend upon the initial conditions which are the income of two adjacent periods. We will call these the zero and first day's incomes. The roots, μ_1 and μ_2, are given by

(6) $$\mu_1 = \frac{\alpha + \beta + \sqrt{(\alpha + \beta)^2 - 4\beta}}{2}$$

(7) $$\mu_2 = \frac{\alpha + \beta - \sqrt{(\alpha + \beta)^2 - 4\beta}}{2}$$

If $(\alpha + \beta)^2 - 4\beta$ is negative, these roots are conjugate complex numbers, and equation 5 will generate a cyclical time series. if $(\alpha + \beta)^2 - 4\beta$ is positive, then either both μ_1 and μ_2 are less than 1, or they are both greater than 1. As

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16. W. J. Baumol, Economic Dynamics, New York, 1951, and D. Hamburg, Economic Growth and Instability, New York, 1956, explain the mathematics of the accelerator-multiplier model. The model used in this paper is homogeneous, and the often-cited recovery behavior of a developed economy subject to business cycles is based upon the non-homogeneous case. This difference is not relevant for the paper at hand.

increasing demand is necessary for economic development, μ_1 and μ_2 are assumed to be real and greater than 1.

The assumption that μ_1 and μ_2 are greater than 1 is not particularly restrictive for countries with a high marginal propensity to consume. With such marginal propensities to consume, values of β just a trifle larger than 1 will yield μ_1 and μ_2 greater than 1. If the marginal propensity to consume is very much smaller than 1, $\beta > 1$ can yield an explosive cyclical time series. (The values of α and β shaded within the parabola of Figure 1 below yield either a cyclical or a damped time series.)

To determine the path of future incomes, two initial incomes are needed, which we will designate as Y_1 and Y_0. The following can be shown:

(a) If $Y_1/Y_0 = \mu_2$, then $Y_2/Y_1 = \mu_2$.

(b) If $Y_1/Y_0 < \mu_2$, then $Y_2/Y_1 < Y_1/Y_0 < \mu_2$.

(c) If $Y_1/Y_0 > \mu_2$, then $Y_2/Y_1 > Y_1/Y_0 > \mu_2$.

If $Y_1/Y_0 \geq \mu_2$, aggregate demand will tend to sustain or even accelerate the rate of growth; whereas, if $Y_1/Y_0 < \mu_2$, aggregate demand will not be sufficient to sustain growth. In fact, even with values of α and β that would tend to generate a monotonic explosive time series, such initial conditions will tend to yield a downturn in income.

The economics of the above relations centers around whether ot not sufficient investment is induced by the change in income not only to offset the savings generated by the level of income, but also to maintain the rate of growth of income. If the initial rate of growth of income is greater than μ_2, the amount of investment induced by the change in income will be so large that the rate of growth of income will increase. If the rate of growth of income is less than μ_2, the amount of investment induced by the change in income will be insufficient to maintain the rate of growth of income, and growth will not be sustained by the workings of the aggregate demand relation. It follows that for growth to be self-sustained, that is, require no external shocks, income must be growing at least at the rate μ_2. As μ_2 depends upon α and β, for each pair of α and β, the minimum self-sustained rate of growth of income is determined.

The Determination of Aggregate Supply

Abstracting from all determinants of productive capacity aside from the capital stock, the productive capacity of the economy as of the $(t-1)^{st}$ date is

$$(8) \qquad Y_{t-1}(s) = \frac{1}{\bar{\beta}} K_{t-1}$$

where $Y_{t-1}(s)$ is the economy's productive capacity, $\frac{1}{\bar{\beta}}$ is the output per unit of capital, and K_{t-1} is the capital stock of the economy.[17] The productive capacity of the t^{th} day is $\frac{1}{\bar{\beta}} K_t$, so that the change in productive capacity is

$$(9) \quad Y_t(s) - Y_{t-1}(s) = \frac{1}{\bar{\beta}}(K_t - K_{t-1}).$$

As the change in the capital stock is the investment carried out in the $(t-1)^{st}$ day, we have

$$(10) \quad Y_t(s) - Y_{t-1}(s) = \frac{1}{\bar{\beta}} I_{t-1}.$$

In addition, I_{t-1} is equal to the ex-post or realized savings of the $(t-1)^{st}$ day, which is written as $(1 - \bar{\alpha})Y_{t-1}$. This yields, assuming that $Y_{t-1} = Y_{t-1}(s)$,

$$(11) \quad Y_t(s) - \left[1 + \frac{1}{\bar{\beta}}(1 - \bar{\alpha})\right] Y_{t-1}(s) = 0, \text{ which yields}$$

$$(12) \quad Y_t(s) = Y_0 \upsilon^t$$

Equation 12 will be called the solution equation to the growth process. In this solution equation, Y_0 is the initial condition, the income of the zeroth date. The root υ is given by

$$(13) \quad \upsilon = 1 + \frac{1}{\bar{\beta}}(1 - \bar{\alpha}).$$

The time series of income generated by equation 12 depends upon the value of $\bar{\alpha}$ and $\bar{\beta}$. There is no reason to believe that these coefficients will remain constant during the development process. For any date, we can say that

$$(14) \quad \upsilon_t = 1 + \frac{1 - \bar{\alpha}_{t-1}}{\bar{\beta}_{t-1}}$$

where $(1 - \bar{\alpha}_{t-1})$ is the realized savings coefficient for the $(t-1)^{st}$ days, and $\bar{\beta}_{t-1}$ is the productive efficiency of the $(t-1)^{st}$ day's investment. As a result, instead of equation 12, we would have

$$(15) \quad Y_t(s) = Y_0 \left(\prod_{t=1}^{t} \right) \upsilon_t.$$

That is, the productive capacity of the economy at any date depends on the initial productive capacity of the economy and the product of the various periods' "growth coefficients". The growth coefficient for any period depends upon the percentage of the previous period's income that was invested and the productive efficiency of that investment.

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17. Baumol and Hamberg explain the mathematics of this model (see note 16 above). In this paper, no distinction in the formal analysis is made between the average and the marginal capital output ratios. The later discussions of the effects of variations in $\bar{\beta}$ are, of course, concerned with the marginal capital output ratios.

The Interaction of Aggregate Demand and Aggregate Supply[18]

Equation 5, which generates a time series of aggregate demand, and equation 12, which, assuming $\bar{\alpha}$ and $\bar{\beta}$ are constants, generates a time series of productive capacity, are two income-determining relations which have to be combined to determine actual income. It is assumed that productive capacity is a limitational factor that determines the ceiling to income, and that for each date, this ceiling is given by equation 12. Whenever income as determined by aggregate demand is greater than productive capacity, actual income is equal to productive capacity, otherwise it equals aggregate demand.

When equation 5 was first presented, it was asserted that the A_1 and A_2 parameters depend upon the "initial conditions". Initial conditions, once imposed, do not necessarily rule forever. A set of initial conditions rule in determining aggregate demand only as long as actual income is equal to aggregate demand. Whenever actual income deviates from aggregate demand as determined by a particular solution equation, new initial conditions are imposed. These new initial conditions determine a new set of values of A_1 and A_2, and a new dating, beginning with the date of the first of the initial conditions as the zeroth date, is imposed. Aggregate demands will be determined by this new particular solution to equation 5, until such a time as once again actual income does not equal aggregate demand. Such intermittent impositions of new initial conditions upon aggregate demand is the process by which aggregate demand and productive capacity interact to determine actual income.

We will first assume that $\alpha = \bar{\alpha}$, and $\beta = \bar{\beta}$.

Aggregate demand of the t^{th} date is given by the equation

$$Y_t(d) = A_1 \mu_1^t + A_2 \mu_2^t.$$

The values of A_1 and A_2 depend upon the initial conditions, and we will first assume that the initial conditions were such that A_1 and A_2 are both positive. Recall that the two roots, μ_1 and μ_2, are both greater than 1, and that μ_1 is greater than μ_2. In this case, the rate of change of income will be an average of μ_1 and μ_2, and in time this rate of change of income approaches μ_1. As μ_1 is typically very large in time, aggregate demand, if unconstrained, will increase at a very rapid rate. For example, if $\alpha = .93$ and $\beta = 2.5$, $\mu_1 = 2.38$ and $\mu_2 = 1.05$. If income increases at the rate determined by a particular solution equation with these roots, then in time income would have to more than double each period. Such rates of growth per period are not observed; hence, the tenure of a particular solution equation is limited.

While aggregate demand is increasing at a rate which is a changing average of μ_1 and μ_2, aggregate supply is increasing at a rate given by ν. As long as the marginal propensity to consume, α, is greater than zero, and as long as β is at least 1, ν cannot be greater than 2, and typically, ν is much smaller. The numbers used in the preceding paragraph, $\bar{\alpha} = .93$ and $\bar{\beta} = 2.5$, yield $\nu = 1.0175$.

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18. Proofs of the propositions in this section are contained in the previously cited paper of mine (see note 3 above).

Assume that the economy at the zero'th date has excess capacity and $\alpha = .93$ and $\beta = 2.5$, and that $Y_1/Y_0 = 1.05 + \epsilon$, $\epsilon > 0$. Productive capacity will grow at 1.75 percent per year while the rate of growth of aggregate demand is increasing, beginning at 5 and increasing towards 138 percent per year. In time, aggregate demand catches up to aggregate supply; when that occurs, actual income equals aggregate supply. At this date, new initial conditions are imposed upon the solution equation in order to determine future aggregate demands.

These new initial conditions will be the actual incomes of the period before and the period during which aggregate supply actually determines income. The ratio of these two actual incomes, which we will write as Y_n/Y_{n-1}, will be equal to some number $\mu_3 > 1$, and we know that $\mu_1 > \mu_3 > \upsilon > 1$. It can be shown that if $\mu_3 > \mu_2$, the newly determined A_1 and A_2 will be greater than zero; if $\mu_3 = \mu_2$, the newly determined A_1 will be equal to, and A_2 will be greater than, zero; and if $\mu_3 < \mu_2$, the newly determined A_1 will be less than, and A_2 will be greater than, zero.

If $Y_n/Y_{n-1} = \mu_3 \geq \mu_2 > \upsilon$, then aggregate demand as generated by the solution equation 5, with A_1 and A_2 both positive and their values as determined by using Y_n and Y_{n-1} as the initial conditions, will generate an aggregate demand for period Y_{n+1} greater than aggregate supply. This is true because aggregate demand of period n+1 is at least $\mu_2 Y_n$, and aggregate supply of period n+1 is υY_n. As a result, actual income of period n+1 will be equal to υY_n, the aggregate supply, and once again a new set of values for A_1 and A_2 will be determined. This time, however, $\mu_2 > \mu_3 = \nu$, so that the newly determined A_1 will be negative and A_2 positive. Aggregate demand as generated by the solution equation with these A_1 and A_2 will be less than aggregate supply for periods n+2, etc. In fact, as A_1, the coefficient of the larger root, is negative, income, as generated by this solution equation, will turn down. The growth process will be interrupted. In this paper, aside from peripheral remarks that recovery from a depression phase in a developed economy is usually quite rapid, the process by which the downward movement of income is reversed is not taken up.

On the other hand, if $\nu > \mu_2$, aggregate demand based upon initial conditions with $Y_{n+1}/Y_n = \nu$ will continuously exceed or be equal to aggregate supply, and new initial conditions will be imposed upon aggregate demand each period. As long as $\nu > \mu_2$, this recurrent imposition of new initial conditions will result in steady growth of income at the rate ν. Hence, the condition for uninterrupted growth is that $\upsilon > \mu_2$.

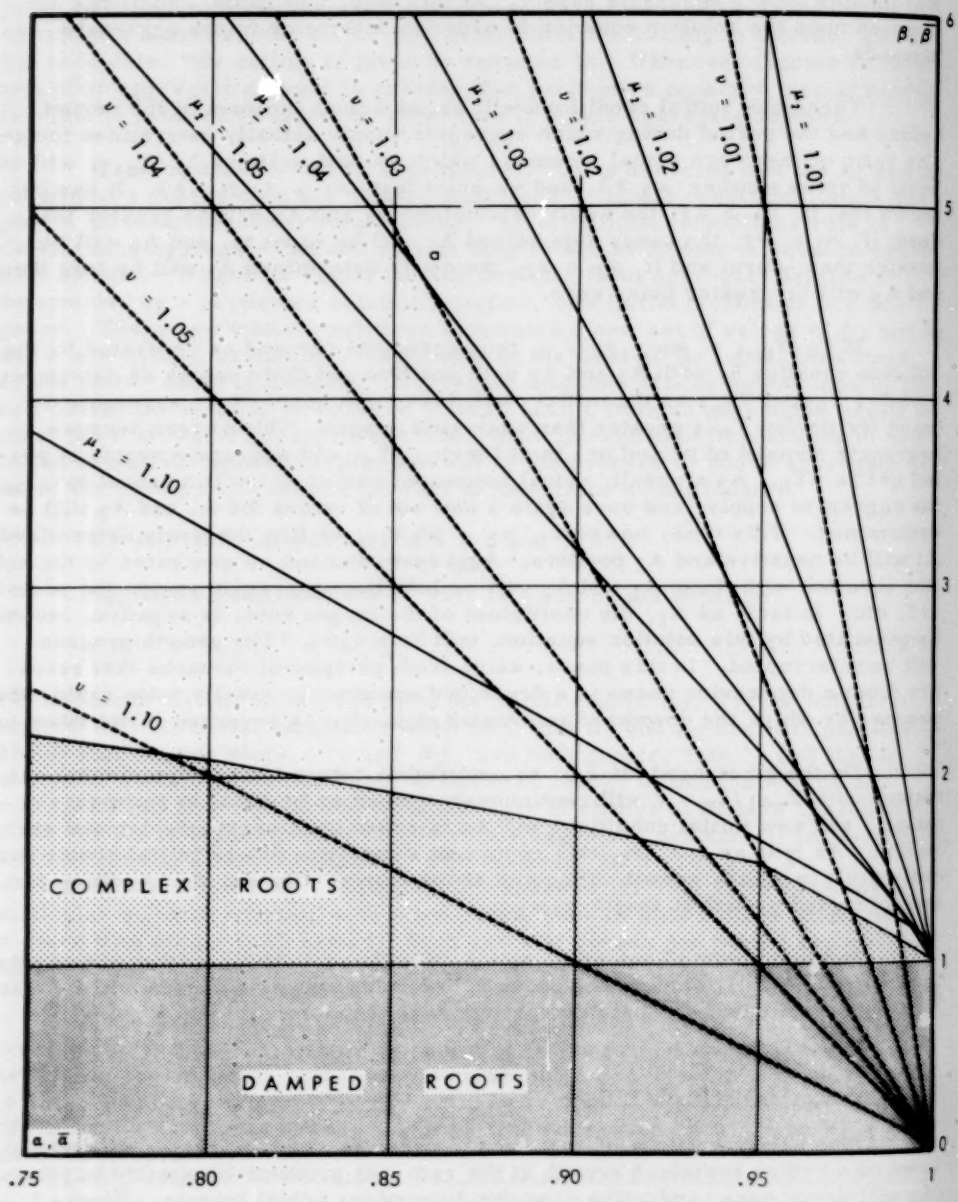
In the numerical example $\mu_2 = 1.05$ and $\upsilon = 1.0175$, so that once aggregate supply actually determines income, future aggregate demands will be less than aggregate supply. Sustained growth is impossible.

The Relation between μ_2 and υ.

The relative values of μ_2 and υ determine whether income will turn down or whether sustained growth at the rate that productive capacity is growing will occur once productive capacity determines actual income. Figure I illustrates two propositions: assuming that $0 < \alpha < 1$ and $\beta > 0$, then:

FIGURE I

THE RELATION BETWEEN μ_2 AND υ



At point a, $\upsilon = 1.03$, $\mu_2 = 1.04$, $\alpha = .86$, $\beta = 4.73$

1. the higher α and β, or $\bar{\alpha}$ and $\bar{\beta}$, the smaller both μ_2 and υ will be;

2. whatever the value of $\alpha = \bar{\alpha}$ and $\beta = \bar{\beta}$ may be within the prescribed ranges, υ, the rate of growth of productive capacity, will be smaller than μ_2, the minimum sustainable rate of growth of aggregate demand.

For example, if $\alpha = \bar{\alpha} = .858$ and $\beta = \bar{\beta} = 4.73$ (the intersection marked "a" on Figure I), then μ_2 will be equal to 1.04 and υ will be equal to 1.03. Hence, if $\alpha = \bar{\alpha}$ and $\beta = \bar{\beta}$, steady growth is not possible. However, if $\alpha = .858$ and $\beta = 4.73$, which yields $\mu_2 = 1.04$, and $\bar{\alpha} = .79$ and $\bar{\beta} = 5.5$, so that $\upsilon = 1.04$, steady growth can occur.

Any combination of values of α and β lying on or above the line labeled $\mu_2 = 1.04$ and values of $\bar{\alpha}$ and $\bar{\beta}$ lying on the line labeled $\upsilon = 1.04$ can yield steady growth at the rate determined by the growth of productive capacity, 4 percent per year. It is therefore necessary to investigate the relationship between α and $\bar{\alpha}$ and β and $\bar{\beta}$ to determine whether growth can occur.

IV. The Formal Model and the Developmental States

It has been shown that if $\upsilon \geq \mu_2$, self-sustained growth can take place. Both υ and μ_2 depend upon two parameters: $\bar{\alpha}$ and $\bar{\beta}$ for υ, α and β for μ_2. Self-sustained growth cannot take place if $\alpha = \bar{\alpha}$ and $\beta = \bar{\beta}$. In this section, the relationship between the two saving and the two investment coefficients, the factors that determine their relative value, and the stability of the relations in each of the alternative states of the economy will be examined.

The Relation between the Saving Coefficients

A problem in the analysis of the saving process is the reconciliation of ex-ante (planned) and ex-post (realized) saving. Ex-ante saving is concerned with the allocation of an income available for spending, whereas ex-post saving is concerned with how income actually produced during a period is divided between consumption and investment. Ex-ante saving and actual investment do not have to be equal, whereas ex-post saving and actual investment are necessarily equal. As consumption plans are presumably carried out, whenever income is rising, it is necessary that investment, which is equal to ex-post saving, be greater than ex-ante saving.

In determining aggregate demand, planned consumption was written as $C_t = \alpha Y_{t-1}$, so that the planned saving of the t^{th} period is given by $Y_{t-1} - C_t = (1 - \alpha) Y_{t-1}$. Hence, $(1 - \alpha)$ is the coefficient of planned saving.

In determining the increase in productive capacity between the t^{th} and the $(t - 1)^{st}$ day, investment was written as $I_{t-1} = (1 - \bar{\alpha}) Y_{t-1}$, where $(1 - \bar{\alpha})$ is the percentage of the actual income of the $(t - 1)^{st}$ period that was saved and invested during that period. The amount of investment actually put in place is $Y_{t-1} - C_{t-1} = Y_{t-1} - \alpha Y_{t-2}$. But $Y_{t-1} / Y_{t-2} = \upsilon_{t-1}$, the rate of growth of income during the $(t - 1)^{st}$ period, so that $(1 - \bar{\alpha}) Y_{t-1} = Y_{t-1} - \alpha Y_{t-1} / \upsilon_{t-1}$, so that

$$(15) \qquad \bar{\alpha} = \frac{\alpha}{\upsilon_{t-1}}$$

If no growth occurs ($\upsilon_{t-1} = 1$), then $\alpha = \bar{\alpha}$; if growth occurs ($\upsilon_{t-1} > 1$), then $\bar{\alpha} < \alpha$; and if a decline occurs ($\upsilon_{t-1} < 1$), then $\bar{\alpha} > \alpha$.

In Figure I, the set of $\bar{\alpha}$ and $\bar{\beta}$ that yields a given υ lies below (to the left of) the set of α and β that yields a μ_2 with the same value. If growth is taking place, $\bar{\alpha} < \alpha$ so that the relation between $\bar{\alpha}$ and α is in the right direction to make self-sustained growth possible. However, as can be seen by inspecting Figure I, $\bar{\alpha} = \alpha/\upsilon_{t-1}$ is not sufficiently smaller than α to assume that self-sustained growth will occur with $\beta = \bar{\beta}$.

In an underdeveloped economy, α and υ are both approximately equal to 1, so that $\bar{\alpha}$ also approximates 1. If $\bar{\beta}$ is greater than 1, productive capacity cannot grow as rapidly as 1 percent per period. A high α and $\upsilon = 1$ leaves very little room for growth.

In a developing economy, even though α may be high due to the Duesenberry effect, once a rapid rate of growth is achieved, $\bar{\alpha}$ will be significantly below 1. For example, if $\alpha = .95$ and $\upsilon = 1.05$, then $\bar{\alpha} = .90$. In this case, a $\bar{\beta}$ as high as 2 will allow productive capacity to grow at 5 percent per year. In a developing economy, $\alpha = .95$, $\beta = 2.5$, and $\bar{\alpha} = .90$, $\bar{\beta} = 2.0$ are compatable with sustained growth at 5 percent per period.

In a developed economy, the expectation is that α is low. If $\alpha = .90$ and $\upsilon = 1.03$, then $\bar{\alpha} = .87$. In a developed economy, $\alpha = .90$, $\beta = 4.5$, and $\bar{\alpha} = .87$, $\bar{\beta} = 4.25$ are compatable with sustained growth at 3 percent per period.

An Aside on Finance

The model used in this paper is in real terms. A consideration of the monetary systems and price level changes associated with development problems is properly outside its scope. However, the model is phrased in terms of ex-ante and ex-post saving, and a brief consideration of how investment in excess of saving can be financed seems to be in order.

The steady rise in income associated with economic growth takes place because investment is greater than planned saving. This investment has to be financed. An aspect of the financing of investment is that some mechanism for the collection of the planned saving of various economic units must exist. Another aspect of the financing of investment in a growth context is that financial resources in excess of ex-ante saving have to be made available to investing units. The adequacy of the financial institutions may be a significant determinant of the developmental behavior of an economy. In an underdeveloped economy, where the financing of investment is not a regular event, the mechanism for collecting and allocating savings may be primitive. The savings that take place may not be made available to finance investment. The hoarding of specie in underdeveloped economies would exemplify this phenomena.

The financial resources in excess of savings made available to investing units takes place either by some money-creating or velocity-increasing process.

In a developing economy with optimistic expectations, a financial system with ample money-creating abilities may finance so much investment that the carrying out of this investment involves considerable price inflation.

The Relation between the Investment Coefficients

No such simple relation exists between the investment coefficients as was derived for the saving coefficients. However, an important distinction between the investment coefficients exists in that the coefficient in the aggregate demand relation relates to planned spending upon investment, and the coefficient in the aggregate supply relation relates to the actual effect upon productive capacity of investment.

The coefficient in the aggregate demand relation, β, states the investment response to a change in income. This investment response depends upon the institutional as well as the technical production relations of the economy. The investment response to a given change in income will be larger the lower the interest rate, the larger the entrepreneurial group and activity, the greater the institutional security of an economy, and the more sophisticated the financial techniques. Hence, the expectation is that these factors would operate to make β larger in a developed than in an underdeveloped economy. (In a developing economy, the entrepreneurial group may have such optimistic expectations as would tend to raise β.)

In addition to these factors, the investment response to a given change in actual income depends upon the availability of investment opportunities, that is, the existence of profitable investment outlets. Profitable investment outlets depend upon the existence of cooperating factors. In an underdeveloped economy, investment opportunities may seem high due to the technological gap that exists, but in fact they may be low as the cooperating inputs--in particular, skilled and literate labor--are lacking. The mere existence of a technological gap may not effectively motivate investments.

In an advanced economy, the investment response to a rise in income can be low because excess capacity exists. As shown earlier, the low rates of growth of ceiling income in an advanced economy make lapses from the growth path likely. If the drop from the growth path is severe, then the investment response to a rise in income may be slight, because the existence of excess capacity fairly close to the technological frontier makes the profitability of investment very low. In this case, high-level stagnation can result.

The coefficient in the growth relation, $\bar{\beta}$, states the efficiency of this period's investment in increasing the next and subsequent period's productive capacity. If $\bar{\beta}$ is high, the productive efficiency of investment is low, and a relatively large amount of investment is necessary to yield a given increase in capacity. Inasmuch as investment requires cooperating inputs, the ability of investment to increase output depends upon the nature and source of the cooperating factors. If the cooperating factors were previously unemployed or underemployed, then no output is lost as the new investment is used. If the cooperating resources had been employed, the increase in capacity due to the new investment has to be net of the loss in capacity due to the decline in output produced by the older capital; e.g., it is the increase in output due to the new

investment minus the decrease in output due to the whole or partial abandonment of existing capital.

Variations in the productivity of the labor force were excluded from the formal model. Changes in the characteristics of the labor force affect the productive capacity of the economy. An improvement in the productive characteristics of the labor force during a particular period will not only increase the productive capacity of the investment taking place in the same period over what it would have been, but it will also affect the productive capacity of past investments.

Expenditures on education and on improving the diet of a very poor population improve the productive capacity of the population. In the data and in our analysis, such expenditures are part of consumption expenditures. It is conjectured that all along the per capita income scale, an increase in per capita consumption improves the productive characteristics of the labor force, which in turn increase the productive capacity of the economy. However, there is no need for the increase in productivity—increase in per capita income relation to be linear. In addition, as education, an ingredient of per capita consumption that improves productive capacity, has a significant "gestation period", an increase in per capita consumption due to an increase in educational expenditures may not immediately affect productivity. Thus, in the transition from a basically illiterate to a well-nigh universally literate population, the first effect may be a decrease in $1 - \bar{\alpha}$ without any compensating decrease in $\bar{\beta}$. However, as the expenditure on education reaches fruition, not only will the $\bar{\beta}$ applicable to current investment be lowered, but the $\bar{\beta}$ applicable to past investments will also be lowered. This leads to a very large rate of increase in productive capacity during a very short period. These real and very important effects of changing productive characteristics of the labor force will be subsumed under the varying efficacy of investment in increasing productive capacity.

In an underdeveloped economy, there are many factors which would tend to make the productive efficiency of investment high. The large size of the technological gap tends to make the productive efficiency of those investments that substitute new techniques for old in existing productions high. New productions would tend to acquire their cooperating labor force from either underemployed or low productivity labor. (However, the very fact that labor is being drawn from such sources may indicate that it has neither the skills nor the energy to cooperate with advanced techniques.) Whatever the natural resource base of the country may be, it would tend to be unexploited. All these are faborable attributes for growth.

A more important determinant of the productive efficiency of investment in an underdeveloped economy tends to make it low. Many investments are of low efficiency until they are completed or unless complementary investments already exist. Investment in railway, road, or power systems yields little in the way of an increase in productive capacity until large blocks are completed. In addition, the unit of such "overhead" investments is so large that the smallest technologically feasible unit may imply excess capacity in an underdeveloped situation. Such investments in a low-income area add but little to productive capacity until or unless completing or complementary investments are undertaken.

The complementary investments utilize the services of the overhead investments. The increment to productive capacity associated with the complementar

investments will be high due to two causes: (1) the technology of the complementary investments inherently uses less capital per unit of output, and (2) these investments raise the productive efficiency of previously completed "overhead" investments by increasing the demand for their output. Essentially, the "overhead" investments are productive, but their productivity may lag far behind their actual creation. In terms of the time periods of our dynamic analysis, for many time periods $\bar{\beta}$ can be very high, but once the overhead projects are completed and cooperating investments are in place, the productive efficiency of these past investments are increased. To a time period analysis this implies that the productive efficiency of these cooperating and completing investments that take place the period just before the productive efficiency of the earlier investments are raised, is very high.

An example may clarify the concepts. Assume a four-year project that involves an expenditure of $1,000,000 each year and which yields no output until the project is completed. Once completed, the project will increase annual productive capacity by one-half the total value of the investment. It would appear that $\bar{\beta} = 2$; however, in the first period, since investment is $1,000,000 and no increase in productive capacity takes place, $\bar{\beta} = \infty$; similarly in the second and third periods. In the fourth period, when investment is $1,000,000 and the increase in productive capacity is $2,000,000, $\bar{\beta} = .5$.

In a developing economy, the productive efficiency of investment is high. The overhead investments are in place; the investments being undertaken not only have a higher output per unit of capital than the basic overhead investment, but their productive efficiency is further raised because the increased output associated with these investments raises the productive efficiency of past investments. However, as "developing" proceeds, the economy runs out of the technological gaps it can exploit, and the net productivity of investment is lowered. In addition, during the developing stage the excess capacity of the overhead investments is eliminated, and further high $\bar{\beta}$ investments may be required. Hence, in the developing state, a number of bottlenecks to further development can occur which decrease the rate of growth of income.

In a developed economy, the productive efficiency of investment is relatively low. Being at the technological frontier, the increment to output due to a period's investment represents the combined net effect of increasing the capital-cooperating factors ratio and taking advantage of improvements in the arts. As mentioned earlier, the improvement in the labor force due to education, etc., tends to improve productive capacity, but being at or close to the "training" frontier, these effects are also small. The combined effects of these elements tend to make the productive efficiency of investment low in a developed economy.

Recall that in Figure I the line for υ equal to some particular rate of growth was below the line μ_2 equal to the same rate of growth. Hence, $\bar{\beta} < \beta$ is conducive to self-sustained growth. In an underdeveloped economy, $\bar{\beta}$ is very high and β is low; these conditions are not conducive to self-sustained growth. In a developing economy, $\bar{\beta}$ can be low and β can be very high, so that the conditions are conducive to self-sustained growth. However, in these economies, bottlenecks to growth can appear which raise $\bar{\beta}$. This can break or at least give a pause to growth. In a developed economy, β is high and so is $\bar{\beta}$. If vigorous technological change is taking place, $\bar{\beta}$ will be lower than β, but in general it is not substantially lower than β. In a developed economy, $\bar{\beta}$ can be such that

uninterrupted self-sustained growth occurs, but typically interruptions to steady growth occur.

The Combined Influence of the Savings and Investment Coefficients

In an underdeveloped economy, α equals $\bar{\alpha}$, and $\bar{\beta}$ can be much greater than β. In this case, self-sustained growth cannot take place. Even if income rises, the amount of savings induced by the level of income will exceed the amount of investments induced by the rate of change of income, and income will turn down.

In a developing economy, both $\bar{\alpha}$ less than α and $\bar{\beta}$ less than β can occur; hence, vigorous growth is possible. However, bottlenecks can arise which raise $\bar{\beta}$, and the need for high-level consumption to provide an educated labor force can reduce the rate of growth so far that the conditions for self-sustained growth are broken.

In a developed economy, $\bar{\alpha}$ is less than α as long as growth is taking place, and $\bar{\beta}$ is slightly less than or is equal to β. In this case, the conditions for self-sustained gro. th might be accomplished. However, even if not, the business cycle of an advanced economy does not necessarily mean a serious interruption of the growth process.

The Stability of the Developmental States

The underdeveloped state is stable. If a shock to income occurs, the high $\bar{\beta}$ coefficient tends to make self-sustained growth impossible. For growth to occur, it is necessary that an underdeveloped economy be subject to a considerable number of sizeable disturbances.

The developing state is unstable in a number of senses. First, if the economy is still within the orbit of the underdeveloped state, any increase in income must be due to shocks, and a decrease in the number or size of the disturbances will result in the economy returning to the underdeveloped state. Secondly, once the "overhead" capital is in place, the productive efficiency of investment can be so high that the economy will on its own move toward the developed state. However, if the rapid developing is broken, due, for example, to a fall in the productive efficiency of investment as a bottleneck is reached, a high level underdevelopment can result. The ending of a high-level underdevelopment may require substantial shocks to the system. In particular, it may require a rise in consumption standards to achieve the trained and educated labor force necessary for the resumption of growth.

The developed state is stable. The normal falling away from full employment during a typical business cycle does not prevent the resumption of the growth process. However, it is possible that a number of shocks to the economy--say, from the financial system--can put a developed economy into a stagnant state. If this occurs, it is necessary that the economy be shocked by external events to return it to the developed state.

A COMPARATIVE VIEW OF EXCHANGE SYSTEMS

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Our exposure to economic thought for two centuries has led us to assume that the exchange of economic goods and services occurs in a market. Even in our own market-dominated society, however, we must contend with several forms of exchange which defy analysis by traditional economic categories of supply and demand, price, interest, profit, rent, and rational calculation of economic gain:

1. The gift for a bride or baby, the services of a friend's wife who prepares dinner, the "good turn"--all are exchanges of goods and services of potential market value. To offer to pay in such exchanges, however, is both inappropriate and insulting. Furthermore, any calculation which enters these exchanges is better attributed to the "rationality" of social reciprocation or status-seeking than to the calculation of economic gain.

2. The redistribution of wealth through charity or progressive taxation is again an exchange of potentially marketable commodities. While the economist may analyze the repercussions of these exchanges in the market, his categories of maximization, prices, and returns seem distant from the social rationale which initiates such redistribution.

3. The mobilization of economic resources for public goals--through eminent domain, taxation, direct appropriation, and selective service--involves the transfer of economic goods and services without the intrusion of an economic market. These exchanges affect the level of production, prices, and income in the market, but the concepts of the market do not explain the original exchange.

On the other hand, we still observe the market in varying degrees of perfection, and we know the value of the economists' theoretical apparatus for explaining and perhaps predicting the course of market behavior. What, then, is the scope of economic analysis in the matter of exchange? What are the spheres of economic calculation which justify the postulate of economic rationality? No matter what our final answers, we must conclude in advance that contemporary economic theory cannot generate specific solutions for all the flows of goods and services, even in societies amenable to economic analysis.

In societies where the self-regulating price market is inconspicuous or absent, the categories of economic analysis grow even paler. What can we say about fluctuations of production and prices in the Soviet Union? Certainly, the accelerator-multiplier solutions for free-market economies have their limitations. Even more, what can we say about the traditionalized and reciprocal gift-giving among island peoples which does not hint at economic calculation,

prices, or gain? What can we say about the post-harvest distribution in Indian villages in which the guiding principles is caste organization? What can traditional international trade theory say about the isolated port of trade with fixed equivalencies which rule out price-determination by supply and demand? Can formal economic theory be of help in these matters? If not, what sort of theory can?

To such questions, the authors of a recent volume[1] address themselves. Roaming through the records of Babylon, Mesopotamia, Greece, Mexico, Yucatan, the Guinea Coast, and village India, they sketch a fascinating picture of the separation of trading practices from the familiar practices of free-market exchange. In addition, the authors prepare a critique of the analytical power of traditional economic theory and suggest some alternative categories for a better comparative economics. Leaving historical and archeological judgments to experts, I should like to assess the authors' conclusions in terms of their own empirical material and in terms of the desiderata for a science of comparative economics.

The volume is salted liberally with polemic. Self-consciously, the authors affiliate themselves with the institutional economists and the anthropologists, and equally explicitly they reject several other types of analysis: (a) economic history--whether steeped in "historic materialism" or "traditional liberalism"--persists in the "traditional coordinates of money, market, price, etc." (p. 28) in the study of civilizations to which they do not apply; and (b) those "eminently conceptualizing disciplines" (p. 98) of the economists, political scientists, and sociologist also come under attack. The chapter-headings alone--"Marketless Trading in Hammurabi's Time", "Separation of Trade and Market", "The Economy Has No Surplus", etc.--show their disaffection with economic analysis. In addition, Arensberg feels that sociologists maltreat particular social arrangements as "a matter of logical premise in the world-view of their discipline" (p. 102), and that they rely too much on their "formal and often timeless logic" (p. 108). In contrast, anthropologists are likely to ask general questions only after "the details of observation about man's behavior have been taken up, compared, ordered, synthesized, classified, and recognized" (pp. 108-109). (c) Even though the authors' approach is "functional" (p. 308), it is not to be confused with "functionalism and system-building relyings on putative needs of individual or society" (p. 112). Theirs is not a search for "functional equivalents" in society after society, a search which becomes fruitless when "the sweep of cultural evolution and variation starts" (p. 112). To understand culture traits one must know not only their function, but "the relative order of their historical emergence, and the necessary precursors and preconditions they must have had" (p. 112). The authors' self-conscious methodological preferences are therefore institutionalist, inductive, anti-systematic, and hesitatingly functionalist.

To hold such preferences and reject others is certainly legitimate in the present state of the social sciences. Further, the authors are not merely flogging dead horses, since they criticize approaches which have both their advocates and their vulnerability. On the other hand, when one's view of the world is too colored by the rejection of alternative "approaches", he is likely first to waste time on idle issues and second to arrive at curious analytical results.

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1. K. Polanyi, C. M. Arensberg, and H. W. Pearson, eds., Trade and Market in the Early Empires, Glencoe, Ill.: The Free Press and The Falcon's Wing Press, 1957, pp. xviii + 382, $6.00.

An example of the first is Arensberg's revival of the deductive-inductive issue in his discussion of the relations between sociology, which deals with functional equivalents, and anthropology, which deals with culture traits. He recognizes the scientific requirement of general analytical statements and general comparative dimensions, as do most of us. At the same time, his discussion seems to oppose sociological (deductive) and anthropological (inductive) methods as mutually exclusive. Surely, enough is known of the philosophy of science and the relations among disciplines to be aware of the necessary interplay between general concepts and empirical observations. One may err in moving from conceptual outlines to empirical investigations and in moving back again. Yet both operations are integral parts of the analytical thought process, and it seems idle to enter controversies over the relative value of each.

All the authors' methodological preferences are apparent in their parallel distinctions (a) between the disembedded and the embedded economy, and (b) between the formal and substantive meanings of "economic". The disembedded economy--most characteristic of the market economy of the nineteenth and early twentieth centuries--is a system in which "men's livelihood is secured by way of institutions that are activated by economic motives and governed by laws which are specifically economic" (p. 68). Its counterpart, the embedded economy, is an instituted system in which the strictly economic elements of price, production, economic motivation, etc., are conjoined to and dependent on other, non-economic institutions (p. 71). Similarly, the formal meaning of "economic" refers to the system of rational choice ("economizing") based on insufficiency of means and the logic of rational action. The alternative meaning, the substantive (which has "nothing in common" with the formal), refers to "an instituted process of interaction between man and his environment, which results in a continuous supply of want-satisfying material means" (p. 248). Substantively defined, the economy implies neither insufficiency of means nor rational choice (p. 243); above all, it is "instituted", or embedded in institutions. In terms of the authors' methodological preferences, the disembedded or formal economy implies a market orientation, a deductive approach, formalistic concepts, and a universal functionalism (i.e., economizing based on scarcity). Correspondingly, the substantive economy implies an institutionalist orientation, an inductive approach, empirically-generated concepts, and a minimum of functionalism (for, indeed, "it is doubtful...whether beyond subsistence man has had any universal economic problems"--p. 110).

Such distinctions, while valuable for certain purposes, come perilously close to throwing out the baby of general economic analysis with the bath of the culture-bound market orientation of traditional economics. This danger may be illustrated in the authors' discussion of the concepts of scarcity and economizing.

To the authors, the postulate of scarcity as the basis for economic activity implies a whole set of premises: (a) an "insufficiency of means"; (b) "more than one use to the means, as well as...at least two ends ordered in a sequence of preference" (p. 246); (c) this gives rise to "economizing" or a choice of means (p. 291); and (d) a retention of formal economic assumptions which "make all economies variations on the market theme" (p. 292). If we remove all but the first--as many modern functional sociologists presumably do--we are either "stripping the concept of its meaning and substituting instead naturalistic assumptions" (p. 292) or opening the door for "devices to

introduce a market economy" (p. 303). Hence it seems that we must accept either the whole "economistic" set of premises or an empty "fact of scarcity" from which "nothing at all follows" (p. 289).

Because the authors find shortcomings with the scarcity-economizing formula, they discard scarcity as a general basis for economic activity. What, then, is the alternative? And what is the nature of economic activity? One suggestion seems to be to consult the facts about specific "scarcity-situations". Scarcity is not a general feature of social action but may vary in individual cases. Scarcity-situations may be rare in some civilizations and very general in others (pp. 246-247). In any case, the investigator should look into the facts of scarcity-situations. A second suggestions seems to limit the definition of economic activity to that instituted process which results in a "continuous supply of want-satisfying material means." Apparently, in this case, economic activity does rest on some sort of scarcity or functional basis, for subsistence is a universal economic problem. Yet, even under this process, scarcity is not a necessary condition, as the definition of a substantive economy shows. In still another suggestion, the authors seem to consider the fact of "institutedness" of behavior as an alternative to the scarcity assumption; "...scarcity is present or absent in varying degrees as a result of the structure of society and social attitudes, and choice is often severely restricted by the social structure within which the individual functions" (p. 343).

It seems to me that the authors have erected an extremely unsteady methodological scaffolding in their attempt to replace the discarded postulate of scarcity. Their first error lies in the unhappy dichotomy of scarcity with all the trappings of market behavior vs. no scarcity at all. The straight "economistic" version of scarcity is, in fact, tightly culture-bound; the job of correction, however, is one of analytical repair, not rejection. We may assume, for instance, that a society possesses a value-system which defines certain goals as desirable for unit members of the society at various levels. By a process of institutionalization, the appropriate channels for realizing these goals are specified. It is apparent, however, that all societies exist in an environment which does not guarantee automatically the complete and instantaneous realization of these goals. Hence an inherent part of the definition of the situation is that certain institutionalized attention be given to the supply of various facilities to permit flexibility in attaining the valued goals. The goals may vary considerably, of course, as may the institutionalized provision of facilities. Yet whether the goals concern perpetuation of kinship lines, attainment of a state of religious bliss, territorial expansion, or maximization of wealth, the society must come to grips with the problem of uncertainty in the environment, because it is not completely and instantaneously provident of facilities. This is the basis for both economic and non-economic resources. The instituionalized attention to the supply of facilities--one aspect of which is the economy in all societies--need not be embedded in one specific type of institution, such as the self-regulating market. Indeed, the structure of the economy will be in part a function of the institutionalized values themselves, in part a function of the general level of differentiation of the society, and in part a function of the availability (or scarcity) of human and non-human resources. Yet, if some sort of interest in readying resources for their use in directed behavior is never institutionalized (embedded or disembedded), this occasions a breakdown in the society in question. Scarcity itself does not determine the structure of the economy; yet, mastery over scarce means is one of the necessary ingredients

in defining the economy in a way which can be compared from society to society. This or a similar statement of the scarcity postulate seems to retain its comparability from civilization to civilization and avoids the embarrasing position that scarcity necessarily results in a market-dominated economy.

With this background statement, let us assess the authors' suggestions for an alternative to the postulate of scarcity. To say that the empirical variability of scarcity-situations argues for rejecting the scarcity postulate displays a singular misconception about the nature of institutions. Scarcity is not a strict matter of historical fact--evident at one time and not so evident at another. Scarcity involves a condition of uncertainty as to the availability of facilities. The institutionalization of economic behavior minimizes this uncertainty by the supply of appropriately-conditioned resources. Merely because there happens to be a surplus at one time and a dearth at another does not mean that the economic institution closes up shop during happy times and works overtime during hard times. The empirical variability in the availability of resources, far from being an argument against the scarcity postulate and economic institutions, seems to be strong evidence for stabilization through the institutionalization of economic activity.

Second, to limit economic institutions to those which work toward a supply of want-satisfying material means seems to ennoble the primitive and peasant societies at the expense of the market society. In the former, it appears (but is not necessarily so) that economic activity is devoted to a sort of material subsistence based on food, clothing, and shelter. Clearly, this definition defies the whole notion of cultural variability which the authors as anthropologists insist upon most strongly. Further, it has been long established that to limit the definition of economic activity to the material side of existence is grossly inadequate for the analysis of economic behavior. It seems to have a certain reality about it for the analysis of subsistence economies. Yet in our own society, in which expressive behavior, ideas, and even personalities have economic value, the formula of the "supply of want-satisfying material means" collapses. It is as illegitimate to try to force a physical or material bias on all economic activity as it is to impose a fully-developed market analysis on all types of economy; both operations involve an ill-advised reductionism.

Third, it is commonplace that the definition of scarcity depends on "the structure of society and social attitudes", among other things. This institutionalization of attitudes and behavior, however, is not an alternative to scarcity, but one of the components in its determination. By looking upon "institutionalized" as an argument against "economizing based upon scarcity", the authors come dangerously close to rejecting the whole concept of "economic" altogether and are left simply with "institutionalized control" over material means, which, as we have seen, is insufficient as a conception of "economic".

To summarize, the concepts of "scarcity", "institutionalized", and "economic" are corollaries, not alternatives, and all must be included in the formulation of economic activity which will stand the test of comparative analysis. Our whole judgment of the volume, however, should not rest on the authors' theoretical dilemmas. They did try their hands at locating the actual "manner in which the economic process is instituted at different times and places" (p. 250). Let us attempt to assess their positive results.

Polanyi suggests three patterns of integration of economic activity: (a) reciprocity, or "movements between correlative points of symmetrical groupings"; (b) redistribution, or "appropriational movements toward a center and out of it again"; (c) exchange, or "vice-versa movements taking place as between 'hands' under a market system" (p. 250). These types are "by no means mutually exclusive, nor do they claim to be exhaustive" (p. 99), but presumably they are selected from what are "very few patterns" of integration (p. 250), and attempt to "transcend [the limitations of economic analysis] in a general theory of economic organization" (p. xviii).

Even though the concepts of reciprocity, redistribution, and exchange are meant to be neither exclusive nor exhaustive, better terminology might have been chosen. Actually, all three involve exchange, in the sense that rights to economic goods and services change hands. Perhaps the concept "self-regulating market" should replace their concept "exchange". Certainly, if the authors consider reciprocity and redistribution not to be exchange systems, they carry their anti-economic bias even further implicitly than they do explicitly.

The authors relate these systems of exchange to forms of trade, money uses, market elements, and--in a casual way--to types of social structure. We might abstract the following paradigm, with examples, from their analysis:

	Forms of Integration		
Characteristics	Reciprocity	Redistribution	Exchange
Forms of trade	Gift trade (guest friends, Kula partners, etc.)	Administered trade (fixed prices, equivalencies)	Market trade (higgling-haggling, self-regulating prices)
Uses of money	Payment use (discharge of obligations, not transactions; blood money, bride price)	Standard use of money (equivalencies in staples)	Exchange use of money
Market elements	Exchange at set rates	Exchange at set rates	Market with bargained rates--supply-demand
Types of social structure	Kinship, neighborhood, community (savage society; Kula; Indian village)	Government-controlled (Indian village, floodwater empires, Soviet Union)	Market mechanism (19th and early 20th century Western Europe and America)

This scheme classifies not economies, but types of exchange. Production and consumption systems, for instance, are not considered. Nonetheless, the classification represents a genuine contribution to comparative economics. I should like to carry this analysis a little further, utilizing partly the authors'

own examples, and to suggest correlates of social structure which may form the basis for further research.

A convenient point of departure is the authors' link between the categories "redistribution" and "administered trade". Polanyi mentions that several elements of administered trade--checking of quality, physical exchange of the goods, storage, safekeeping, etc.--are associated with the collection of exports and repartition of imports, both of which belong "to the redistributive sphere of the domestic economy" (p. 262). Administered trade is correlated, therefore, with the redistributive kind of economy. Yet the authors' own examples do not seem to justify this conclusion: (a) they describe the ummeanum (a sort of public figure who directed investment) of the early Assyrian trading post conjecturally as fitting into "risk-free marketless trading, organized in the public interest, primarily on behalf of governmental war material procurement" (p. 25). This seems less "redistributive" than "mobilizative", i.e., subordinated to collective social goals, especially wars. (b) The Mesopotamian economy, which seems genuinely "redistributive", is not discussed in terms of administered foreign trade; indeed, the only mention of external wealth concerns booty and plunder; the other goods and services were redistributed internally (p. 36). (c) The administered ports of trade in the Eastern Mediterranean seemed to guarantee political neutrality and protection for traders; there is no mention of a redistribution system by central authorities. In fact, the changing neutrality of the ports of trade was associated with a changing balance of power in the Middle East. (d) The Maya-Aztec trade--dealing primarily in luxuries for the upper classes--was administered trade but scarcely was concerned with the system of redistribution of economic goods and services internally. (e) The most convincing separation between redistribution and administered trade, however, occurs in the case of the port of Whydah and the kingdom of Dahomey. The system of administered trade had very little to do with the "redistributive economy" of Dahomey, but instead with maintaining the kingdom's ability to pursue its military policy; it was an arrangement to trade slaves for implements of war (p. 161). In fact, trade in the great port was to obtain "cloth and military stores" for the "palace, the army, and the houses of the great" (p. 182), whereas the market was for the necessities of the common folk. Administered trade was removed, in short, from much of the whole complex of redistribution.

In the light of these examples, I should like to add a dimension to the authors' classification--namely, the "mobilizative", which subordinates economic arrangements to an interest in pursuing collective goals, particularly in maintaining the political status of the society in question. Mobilization differs from redistribution insofar as it does not solidify and maintain a system of stratification (as the redistributive system does), but collects goods and services into the hands of those responsible for pursuing the broad political aims of the society. Of course, redistributive and mobilizative aspects of the economy may and do appear in the same society. It seems to me, however, that "administered trade" is more a characteristic of mobilizative institutions (usually government) and is seldom connected with redistributive systems. This is true not only for the authors' historical examples of administered trade, but also in modern states with bulk exchange, arranged trade agreements, trade "policies", etc., and in looser groupings such as the Sterling Area.

Therefore, we are presented with four, not three, types of exchange systems: (a) reciprocative; (b) redistributive; (c) mobilizative; (d) self-regulating market. Each is embedded in a particular kind of social structure. One way to identify these respective social structures, as well as to elucidate the principles governing each type of exchange, is to ask what kind of social structure typically appears as the bearer of potential instability for each type of exchange. Naturally, instability of the flow of economic goods and services occurs in natural disasters such as lack of rain, flood, storms, etc., no matter what the institutional embeddedness of an economy. On the other hand, all economies institutionalize a focus for possible instability of economic flows in the following ways:

In the reciprocative system, the exchanging partners are segment units--usually families, neighborhoods, communities, clans, etc.--which base the exchange of goods and services on an implied reciprocative equivalence at appropriate times and places. In order for the resulting flow of commodities to display instability or break down, there must be an alteration in the structure of exchanging units themselves. Of course, this alteration has little or nothing to do with the economic conditions of supply and demand, but rather with the dynamics of kinship, clanship, tribalism, neighborhood, and demography. Because reciprocative exchanges normally follow from an ascribed base (frequently kinship), it is probable that a peculiar stability and inflexibility governs these types of exchanges. Since the sources of their change lie in the modification of ascribed roles, moreover, change is likely to be gradual.

In the redistributive system of exchange, the potential sources of instability are institutionalized in the systems of stratification, or the allocation of rewards in society--whether these rewards by power, wealth, or prestige. For example, the distribution of fixed quantities of foodstuffs in the authors' Indian village was a function of caste position. The redistributive system of the Assyrian city-palace organization was linked closely to the distribution of political power and prestige in the communities (pp. 36-37). To choose a modern example, the institutionalization of transfer payments (progressive taxation, welfare measures, etc.) in the British case rested on a changing ideology regarding the rights of various classes. Finally, the flow of charity in modern civilization rests on institutionalized values concerning the relations between the haves and have-nots in a society with unequally distributed rewards. By investigating the nature and principles of these stratification systems in which redistributive systems of exchange are embedded, we may be able to read some regularity into this kind of economic exchange.

The stability or instability of the mobilizative type of exchange depends primarily on the fortunes of those pursuing the collective goals of society, such as wars, maintenance of the state, etc. The enclaves or ports of trade which the authors so ably analyze fed on a certain balance of power among empires which led all to prefer a politically neutral trading area (e.g., the Near East, pp. 54-55; Dahomey, pp. 174-175, 182). In modern times, the arranged trade and currency agreements of the Nazi and Soviet governments have stemmed from an interest in mobilizing resources for maximizing national power. Further, to analyze some of the arrangements for "bulk purchases" and "procurement of vital materials" would no doubt reveal the same interest in the polity and its perpetuation. Instabilities in this form of exchange, finally, are a function of the political status of the society in question. This exchange is not

governed by the principles of the market, in short, but there are definite institutionalized structures--the political authority in its capacity to mobilize resources--through which we may develop generalizations concerning the short-term adjustments and long-term modifications of this type of exchange.

In connection with the market type of exchange, the burden of instability rests on the market itself. Price and the usual economic mechanisms presumably operate outside the concrete institutional nexus of stratification, political authority, or kinship. On the other hand, the institutionalized values of economic rationality govern the rules of behavior in such markets. Furthermore, the fluctuations and changes in market trade are analyzeable within the formal apparatus of economic theory.

We might add that these four types of exchange correspond to the four functional subsystems of society--as outlined by Parsons and his associates--in the following ways:

(1) Latent pattern-maintenance and tension-management. Every social system is governed by a value-system which specifies the nature of the system, its goals, and the means of attaining these goals. A social system's first functional exigency is to preserve the integrity of the value-system itself and to assure that individual actors conform to it. This involves socializing and educating system-members, as well as providing tension-control mechanisms to handle and resolve members' disturbances relative to the values. At the level of society as a whole, the social units which specialize primarily in this "latency" function are families, communities, religious and quasi-religious groupings, etc. The type of exchange among such units--as illustrated by the authors' and other examples--is reciprocative.

(2) Goal-attainment. Given the value-system and its relatively stable institutionalization, the social system must establish certain relationships with the situation external to the system; that is, the system's activities must be directed toward a goal or set of goals. At the level of society as a whole, the social units which specialize in goal-attainment are, broadly speaking, political. The acquisition, control, and disposal of facilities in this political sphere follow the principles of mobilizative exchange--taxation, eminent domain, forced contracts, selective service, etc.

(3) Integration. Harmony of purpose and lack of conflict are not necessarily guaranteed in the specialized pursuit of goals. That function which deals with maintaining the interaction among individual units is integration. At the level of society as a whole, this involves the allocation of rewards and facilities in accordance with the integrative requirements of society. One of the kinds of social structure closely associated with this integrative function is the stratification of the rewards of wealth, power, and prestige. The kind of exchange associated with the integrative subsystem of society is redistribution.

(4) Adaptation. This subsystem involves the supply of facilities by which a variety of goals may be pursued at different times and in different situational contexts. Units specializing in these adaptive functions are economic units--firms, boards of directors, managers, etc.--in the classical sense. The kind of exchange associated with these specialized units is market exchange.

To these sweeping associations, we should add many qualifications. In some societies, all exchange seems to be concentrated in a single type--most notably in the island peoples' reciprocal gift-giving among clans and tribes. In others, such as our own, all four types of exchange are apparent, though a single type--the market--predominates. In still others, such as the Soviet Union, all four types make their appearance, though the mobilizative, redistributive, and market elements are controlled partially under a vast political rubric. The appearance and rank-order of the various types of exchange, in short, are dependent on the value-system of the society in question, the level of differentiation of its social structure, and the complexity of the demands of its internal and external situation. Despite these qualifications, to link types of exchange with types of social structure on the one hand, and to link the types of social structure with types of functional requirements on the other, lead toward a more general basis for the comparative analysis of exchange systems.

To summarize, we may agree with the authors' belabored dictum that formal economic analysis has little value outside the market context. We may also accept their assertion that economic processes are instituted or embedded. Yet the authors seem to hesitate to go further than demonstrating these basic points. Perhaps they preferred not to generalize because they were so aware of the shortcomings of formal economic theory. Perhaps, on the other hand, their position as institutionalists and anthropologists led to this hesitation. In any case, they did not go far enough in exploiting the general implications of their own interesting case material. It seems to me that to identify typical kinds of exchange (as they did), to trace these exchanges to typical kinds of social structure (as they did only casually, and in one case erroneously), and finally to investigate the economic results stemming from the principles governing these several kinds of social structure (as they did not do), we may move a step closer to the development of a genuine comparative economics which meets the requirements of a comparative science more adequately than either traditional economics or radical institutionalism.

A NEW TEXT ON THE ECONOMICS OF DEVELOPMENT*

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This book is a welcome antidote to much that is over-simplified and mechanistic in the current literature on development. Especially appealing is the authors' use of systematic analysis along with their practical knowledge of underdeveloped countries to question some concepts and prescriptions that have been incorporated too uncritically into the literature.

Part I (ten chapters) describes and analyzes basic features of the economic landscape of the underdeveloped world. The initial chapters examine the conceptual and practical difficulties of measuring national income, capital, and the labor force. Although this makes for a rather slow beginning, it does dispel any undue reliance on quantitative precision in this field. The authors argue against some commonly accepted empirical notions: they believe that existing levels of national income in underdeveloped countries are generally underestimated, the capital-income ratio is higher than normally estimated, and there is not much empirical support for the generalization that development is attended by a progressive shift from primary to secondary and subsequently to tertiary industry.

The discussion then examines a range of topics grouped in terms of natural resources, human resources, and capital. The authors stress that it is an over-simplification to suggest that the underdeveloped countries in general are ill-favored with natural resources and that this is a principal cause of their poverty. Nor is there such a strong preference for leisure or self-sufficiency as is commonly believed. They suggest that more important causes of underdevelopment are associated with the skill, resourcefulness, and thriftiness of the population, the effects of social institutions and restrictions on the movement of people or on the acquisition and exercise of skills, the state of production techniques, and the magnitude and character of capital formation.

Part II (five chapters) delimits the role of government in influencing development. In conformity with their view of development as essentially "the widening of people's access to alternatives", the authors adopt as their criterion of good policy that it should extend the efficient range of alternatives open to producers and consumers, leaving to government "only a limited role as an active propulsive agent in development in the capacity of saver or entrepreneur, or as controller or director of the economic activities of others."

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* P. T. Bauer and B. S. Yamey, The Economics of Under-developed Countries, London: James Nisbet, and Cambridge: Cambridge University Press, 1957, pp. xiii + 271, 10s. 6d.

Accordingly, the possibilities of development through comprehensive central planning are not considered, but attention is given to the major policy issues of accelerating capital formation, agricultural improvement, and industrialization. Taxation for compulsory saving is rejected as impinging unfavorably on productive effort, growth of specialization and exchange, and private saving. It is further argued that if the funds for development are compulsorily gathered by statutory marketing boards, the burden is particularly inequitable and the disincentive effect very high. As for the inflationary financing of development, the authors claim that the possibilities of development through controlled inflation are commonly exaggerated, and the dangers and disadvantages unduly minimized.

To raise efficiency in agricultural production, efforts should be directed to increasing the volume of capital and skill, rather than to changing the institutional setting--tenancy or ownership--which does not by itself come to grips with the underlying problem of the ratio between various classes of resources. Proposals that rents or debt charges should be scaled down, or that land should be transferred to the small-scale tenant cultivators, are believed unlikely to bring about significant net benefits and may even reduce agricultural output.

The external economies, disguised unemployment, balanced growth, and diversification arguments for assistance to industry are for the most part dismissed as being justified only in very special circumstances and as being difficult to apply in practice. On the other hand, more assistance may be given to industry through the withdrawal or relaxation of restrictions on immigration, avoidance of "premature attempts to introduce so-called labor and social welfare legislation" which inflate labor costs, and avoidance of policies that control the charges or profits of public utilities or foster uneconomic branches of agriculture.

The incisive coverage of these topics should contribute substantially to a student's understanding of the problems and potential of development. Some readers may be disappointed, however, by certain omissions and emphases. The focus is mainly on the contemporary period, microanalysis, and domestic aspects of development. There is considerable use of theoretical concepts and tools of analysis, but there is no approach towards any integrated analysis of development as a process involving causal relationships evolving over time. Although one may certainly sympathize with the authors' view that it is impossible to isolate any one factor as the inevitable prime mover in the process of development, nonetheless, more might have been done to point up the main determinants and strategic variables in the development process. For when all is said and done, the reader is still left unnecessarily vague on just what initiates and maintains development.

Further, on the crucial question of why the poor countries have not developed more rapidly, only slight attention is given to the repercussions of international forces. When such writers as Arthur Lewis, Gunnar Myrdal, Hans Singer, and others, have placed so much emphasis on the unequal distribution of gains from trade between rich and poor countries and the historical tendency for increasing international inequalities, one may regret the failure to appraise these arguments. The general tenor of this book indicates that

the authors would have been eminently qualified to expose some fallacies in this modern sophisticated "exploitation" type of reasoning.

Finally, many readers may believe that the limited and highly qualified role assigned to the government is somewhat unrealistic and at times question-begging. The rather optimistic conclusion on the adequacy of entrepreneurship might be based on the authors' knowledge of Malaya and West Africa, but it is questionable how far this conclusion is valid for most poor countries. Moreover, many of the policy conclusions stem mainly from the authors' belief that development entails a large number of small changes and from their use of marginal analysis to the relative disregard of macroanalysis and neglect of "total conditions", as distinct from "marginal conditions". The result appears to be more of a concern with "tightening" the economy--rather than "widening" it, and more attention to achieving the gains from an optimum allocation of resources--rather than the gains from growth.

These objectives are, of course, interrelated, once it is realized that "today's" output will determine "tomorrow's" input. But then the problem of efficient resource allocation assumes a form different from that in this book: it becomes necessary to consider the multi-period requirements for the optimal path of resource allocation. In this context, the government may have a larger role to play than that accorded to it by an essentially static interpretation of resource allocation. And all the more so when the underdeveloped country lacks a refined market system, and when price and income stimuli are inadequate in the face of impeding social institutions and a traditional value structure unlike that of western capitalism.

THE SOCIAL IMPLICATIONS OF TECHNICAL CHANGE*

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This book is composed of five studies designed to illuminate the various aspects of the theoretical study of social implications of technological change and economic development. Each study was submitted by a team from a different country. Of the five parts, two are of a rather general nature, whereas the other three deal with somewhat more specific problems. A Dutch team from the Institute of Social Studies at the Hague submitted one of the general chapters on technological change as a consequence of social change, and a French team, made up of Georges Balandier and Charles Morazé wrote a concluding section on the synthesis between anthropology and history. Between these two rather brief sections are sandwiched three longer parts on concepts (by a Belgian team from the Institut de Sociologie Solvay); on measurement (by three American scholars--Simon Kuznets, Wilbert E. Moore, and Kingsley Davis--working independently of one another); and on models (by a British team from the London School of Economics under the direction of Raymond Firth). Thus the book is, as Balandier says in the introduction, the result of "team work" which has as its aim to "define better the problems of the implications and social consequences of technical evolution", rather than to add to existing theoretical formulations in this field.

Unfortunately, the book is not a clear success. Although some attempts at coordination were made, and although at various periods during the making of this work preliminary drafts of the several sections of all chapters were distributed among the participating teams, there is a singular lack of unity and continuity in this book. Many collections of independently-authored essays display this lack of unity, but in this work, in which it would be more important and more significant than in, say, a Festschrift, this absence of continuity is especially disturbing. In addition to the lack of internal integration, the overall level of discourse in the different portions is of highly variable quality. This is another characteristic this book shares with a Festschrift. But, whereas in some other collection of independent papers differences in the quality of various contributions are due mainly to differences in scholarly skill or diligence of the contributors, the differences in performance in this book are due to different national traditions in the study of social relations. It is perhaps not a sheer accident that the Dutch contribution has a strong flavor of "classical" German sociology, in spite of frequent references to works of modern American social science; that the essay by Morazé exudes some of the air of the Annales; and that the British contribution reads a bit like a Command paper.

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* Bureau International de Recherche sur les Implications Social du Progrès Technique, Social, Economic and Technological Change: A Theoretical Approach. Paris: International Social Science Council, 1958, pp. x + 358.

It need scarcely be stressed that the book contains some excellent parts. Given the undeniably high scientific achievement of most contributors, this can be assumed as obvious. For example, the chapter by Simon Kuznets on "Measurement of Social Implications of Technical Change", or some portions of the Dutch report, or Wilbert E. Moore's imaginative essay on "Measurement of Organizational and Institutional Changes in Productive Technology", or the essay by Morazé on "Leçons d'histoire", are excellent short statements of their respective subjects.

One of the strange features of this work is the considerable space given to the Belgian section on concepts. It may be granted that in a field as relatively new as the study of social implications of technical change, a number of new concepts have been developed which demand clarification and explanation. But one would expect that the treatment of "patterns" and "models" would require considerably more space than the discussion of concepts. Yet the British team could squeeze its contribution into 32 pages, which is one of the reasons why this contributions is, on the whole, more rewarding than the lengthy disquisitions of the Belgian team. Instead of dealing with the chief new concepts developed in the study of social implications of technical change, the Belgian team devoted its contribution to an attempted theory of the sociology of technology, an effort which is, on the whole, unsuccessful. The reader is confronted with a large number of terms describing different aspects of technology which are not ordinarily used in the literature on economic development. It might be argued that the introduction and more widespread use of these terms would enhance our understanding of the social implications of technical change, but the paper on concepts is, in its main part, unrelated to ongoing research on industrialization and remains almost entirely in the realm of pure philology.

Perhaps a good use of this set of studies would have been to regard them not as final contributions on various aspects of social implications of technical change, but rather as first statements of those problems on the basis of which the International Social Science Council might have called a conference, to which the authors of the papers were invited and at which these essays were made the subject of discussion. A final report might have become achievable which would have constituted a useful paper, similar to the well-known study by the United Nations on Measures for the Economic Development of Underdeveloped Countries.

Another fruitful approach might have been an extension of the attempt made in the chapter contributed by the British team to present an extended synoptic statement of the concepts, theories, and propositions relating to the study of social and related economic and technical change. In fact, it is difficult to imagine a more useful service that could have been performed by the authors than the presentation of such a "propositional inventory", of course with some indication of the degree and kind of empirical evidence available for each of the propositions listed. Upon this "inventory" of general propositions, further research programs could have been built; areas with conflicting evidence could have been subjected to further study; and some widely held theories might have been shown to be without empirical foundation.

The book meets virtually none of these demands, perhaps because the particular division of labor which was chosen, and the lack of adequate coordination during the execution of the project, prohibited the optimum exploitation of the talent contributed. A simple example will show this. In the British report,

several pages are devoted to the discussion of sociological models, but the discussion concentrates essentially on models presented by Karl Marx and Werner Sombart, with some cursory remarks on Max Weber thrown in. In an earlier chapter, Wilbert E. Moore in discussing problems of measurement bases his analysis upon a model of social structure which is rather commonly applied in modern American sociology. It draws its inspiration from Weber, Durkheim, and Pareto, but new elements elaborated by Talcott Parsons, Edward A. Shils, Marion Levy, and others have been incorporated.[1] This model appears to be a much more suitable vehicle for the analysis of technical and economic change in its socio-cultural dimension than those of Marx or of Sombart. Yet, intercommunication between Moore and the British team was apparently so defective that a section on models omits the discussion of the very model which is practically applied in another portion of the book.

Many of the "dissonances" are so obvious that the editor of the volume, Georges Balandier, could not but refer to them in his excellent summary chapter. Here he tried to draw together as many of the tangled skeins of the previous discussion as was feasible. But he has added only few observations of his own and has passed by a good opportunity to round out the discussion of the earlier chapters. For example, the British team paid only little attention to anthropological models and concentrated on "patterns" of relationships between culturally significant variables. It is granted that present-day anthropological theory has scarcely gone beyond the stipulation of patterns of various kinds, but this does not mean that some recent attempts to present models of culture change (as, for example, the multilinear evolutionary model of Julian Steward, or the models distinguishing between different forms of agricultural organization and relating them to technological and socio-structural variables, as presented by Eric R. Wolf and Sidney W. Mintz)[2] would not have added considerably to our understanding of the socio-cultural implications of technical change. Balandier, who is an anthropologist himself, should have pointed out that here, as in the realm of sociological models, the British team concentrated on the least rewarding ones (e.g., Lewis Morgan's theory of cultural evolution) and has omitted discussion of the empirically much more valid models of more recent vintage.

In spite of its shortcomings, this book is of value, not so much because of its contents, but because it is first step in international collaboration in the study of an important all-embracing problem in social science. For this reason, its defects, by way of indicating what should be avoided in the future, are as valuable as its virtues. One may look forward to the next effort of the International Bureau in international cooperation and research towards a better understanding of the interrelations between socio-cultural and technical-economic change.

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1. See Talcott Parsons and Edward A. Shils, Toward a General Theory of Action, Cambridge, Mass., 1951, Part II; Marion J. Levy, Jr., The Structure of Society, Princeton, 1952, esp. pp. 421-444; Talcott Parsons and Neil J. Smelser, Economy and Society, Glencoe, Ill., 1956, Ch. V.

2. See Julian Steward, Theory of Culture Change, Urbana, Ill., 1955, pp. 11-29; Eric R. Wolf and Sidney W. Mintz, "Haciendas and Plantations in Middle America and the Antilles", Social and Economic Studies, Vol. VI, No. 3 (September 1957), pp. 380-412.

JAMES SYDNEY SLOTKIN
1913-1958

Fred Eggan
The University of Chicago

Sydney Slotkin was born and brought up in New York City, and while still in high school began to develop the skills and wide range of interests that characterized his later life. After two years (1930-32) at the Experimental College of the University of Wisconsin, Sydney entered the University of Chicago, where he majored in anthropology and took minors in sociology and social psychology. Continuing with graduate work, he received his Ph.D. in 1940 with a thesis on "Jewish Intermarriage in Chicago."

During this decade, Sydney developed the broad interest in social science which was reflected in his later teaching and research, but he also was concerned with more specialized fields, such as social anthropology, ethnohistory, culture and personality, ethnopsychiatry, and the sociology of knowledge. His early papers reflect a wide range of subject matter, treated with attention to both detail and problem. During this decade, also, he met and married Elizabeth J. Cole, a fellow student and a scholar in her own right in the fields of mathematics and economics. Together they made an excellent combination, whether in their Woodlawn Avenue apartment or in the field among the American Indians.

Sydney taught briefly at several universities before coming back to the University of Chicago in 1946 to teach in the College social science program and in the Division of the Social Sciences. His first major publications, Social Anthropology (1950) and Personality Development (1952), were followed by an important series of monographs based on his field researches among the Menomini Indians. From these researches he was led to a major interest in peyote which culminated in The Peyote Religion (1956). More recently, in connection with the Research Center in Economic Development and Cultural Change, Sydney had turned his attention to the problems of industrialization in newly developing countries and had a monograph in preparation on this subject when his untimely death occurred.

Perhaps the best appraisal of his accomplishments is that of Kroeber.[1] He notes that Slotkin's Social Anthropology "is a remarkable book in the precise definition of its aim, method, and technique, and in the consistent rigor with which these are adhered to"; and goes on to point out that: "Essentially it means the entry into anthropology of an overtly 'social science' orientation." Unfortunately, Sydney did not live to combine this approach with the growing body of empirical data that he had gathered in his field researches.

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